Common Property Institutions and Relations of Power: Resource-Management, Change and Conflicts in the Rufiji River Floodplain in Tanzania

Thesis

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By **Patrick Meroka**

Of **Kenya**

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Dedicated

To

My beloved family

Members

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Abstract

Over the past 40 years, there have been enormous changes in the common pool resource (CPR) use in the Rufiji floodplain. A growing human population, migration and increasing demands on the basin resources have culminated in this change. The floodplain, however, still lacks an appropriate integrated management approach. This has resulted in inter-institutional conflicts, ineffectiveness, and gaps in management imperatives and duplication in efforts.

This thesis paper focuses on the management of fisheries, wildlife and pastures in the Rufiji floodplain area in Tanzania. It presents the changes in institutions governing these common-pool resources among the different ethnic groups know as the WaRufiji peoples and the impacts of the new state institutions on resource use and management. The thesis paper argues that due to the erosion of local institutions during colonial and post-colonial periods, especially the introduction of the villagisation *ujaama* programme, the commons of the Rufiji Floodplain became open access due the state's lack of enforcement, affecting the resource base and the livelihoods of local people and also affecting the option to act collectively to draft new institutions. Since liberalisation and privatisation in the 1990s the common-pool resources have remained open access despite changes in legislation to give back power to the local level in relation to outside users. However, differentiations have to be made: While fisheries, forest and pasture have still an open access character due to the lack of support by the state in co-management systems, engagements of international NGOs and government organisations regarding conservation in the area have been in so far successful on wildlife but there is more work to be done on the other natural resources in the area. The interest of international NGOs in wildlife and financial support from their mother countries through Development Corporation made it possible. But this policy is not based on local actions because despite formal laws that incorporate village level control and a more participatory approach, local interest groups are de facto excluded from ownership and management decisions while facing high costs and management de facto looks more like fortress conservation to harness income from tourism than participatory management. In addition NGOs like IUCN have made attempts to create a new institutional environment but without addressing complexity of local management systems and of the political constellations. However, differentiations have to be made with regard to collective action on the local level: It depends on how changes of relative prices for common-pool resources affect a local context depending how close to commercial centres of trade networks these locations are. The thesis paper therefore compares two village settings trying to address this question of special differentiation.

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1 Introduction

The thesis paper is looking at two settings of common pool resources (CPR) management among the Warufiji people in the Rufiji floodplain, in coastal Tanzania. It shows how the Rufiji people managed the common pool resources (CPR) such as fisheries, forest and wildlife in the pre-independence times, and how local traditional institutions governing these resources underwent changes in the colonial and post-independence period[1].

The research took place in the Rufiji floodplain, which is inhabited by various ethnic groups collectively called Warufiji. The Rufiji floodplain is important for common pool resources such as wildlife, fisheries and pastures, as well as agriculture. The Warufiji had established informal institutions governing CPRs in pre-independence times, which have been changed by colonial (German and English) and post-colonial rule, especially by the socialist Ujamaa-policy of villagisation of 1970s.

The introduction of Ujamaa policies in Tanzania in the 1970s affected the traditional institutions in the floodplain as well as other parts of Tanzania[2]. The newly created state administration replaced the traditional institutions, which were gradually eroded following the change of state policies, which took powers from the local lineage leaders and were transferred to the central government headed by the president of state. It was said that Nyerere the first president of Tanzania knew the political challenges, he was to face, if the local lineage leaders were to remain as rulers at the village level. This was to be a threat to his administration as the lineage leaders had local support and feared of their natural powers, which were linked to witchcraft.

This thesis paper focuses mainly on the institutional management of Common pool Resources (CPRs) and the transformation of these institutions in the Rufiji River in Tanzania among the Warufiji people. The paper presents the changes in institutions governing the common pool resources such as fisheries, wildlife and pasture and the impact of the new state institutions on the Warufiji people today. Due to the economic and political constraints the state faces today, the management of the CPRs has shifted informally from the respective state institutions and

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[1] Warufiji means the people of Rufiji. WA prefix in Swahili stands for collective and since Rufiji is composed of many ethnic groups, these people call themselves Warufiji.

[2] The Ujamaa policies of 1970s reorganised the social, economic and political structure of Tanzania. The reorganisation of internal administration opened the floodplain to external actors. The territorial boundaries were reorganised and new boundaries were drawn, which affected the management of the CPRs in the floodplain.

now is mainly under the control of powerful individuals, who have manipulated and shaped the political system in favour of their personal interests. The customary laws, which included monitoring, regulation, and sanctioning, have been replaced with formal laws giving the external actors powers on resource management and extraction of CPR. The informal laws became weaker and the newly enacted state laws were hardly implemented by the state due to lack of human resource, social, and financial capital. This led to an open access constellation in the case of fisheries, wildlife and forest resources. The failure of state institutions to manage the common pool resources in the floodplain has impelled the donor communities to push for privatisation of these resources in the country under the concept of development under structural adjustment programmes (SAP).

The absence of strong state institutions combined with the prevalence of corruption, have contributed to mismanagement of the CPRs in the Rufiji floodplain. To solve this problem, some external NGOs interested in the conservation of common pool resources, in collaboration with state authorities at the district, have started generating awareness on CPR management and are imparting the required technical assistance and financial support to local communities. The main objective is to enable the local communities to establish local institutions as well as craft by-laws to manage the common pool resources, which are currently under pressure due to over harvesting within their respective areas of jurisdiction. The other problem is that the stakeholders are heterogeneous in composition and lack mutual interest in the CPR management, making collective action difficult because some individuals are said to be more powerful than the rest of the stakeholders. The same group of people control the bargaining powers excluding the rest of the resource users from active involvement in the management and distribution of the resources through the influence of the their own materials, placing the less fortunate in a weak position economically. The question is how the demands and interests of all resource users can be fulfilled without eroding the sustainability of the targeted CPRs. It is not possible in situations like this to separate the actors, as their interests in the resources are intertwined. According to the oral information obtained during the field study, access to CPRs for the last 50 years in this coastal region of Tanzania was connected to membership, kinship and local residence. Today this is more complex because non-resident resource users have not only an impact on the CPRs but have great influence on the socio-economic and political structure of the area. Other external factors such as climatic change, technology, infrastructure and change in relative prices have additionally increased the pressure on household income leading to more pressure on CPRs while rules of access are not well defined. Today, under privatisation and liberalisation,

different resource users are involved in the CPR-management (state, local and immigrants fishermen and cattle herders, conservationists, etc). This makes Rufiji a target for different resource users, indigenous and non-indigenous. Moreover, under the impact of the IUCN (World Conservation Union) Rufiji Environment Management Project (REMP), one of the study villages (Mbunju/Mvuleni) closer to the commercial market is facing continued conflicts related to CPR use and access especially fisheries, which has become an important commercial resource in the area. During the implementation of the REMP concepts to conserve the CPRs in this village, some of the villagers felt excluded in the planning and management process. This has caused further negative impact on the work that REMP did in this village, as the conserved resources are now more open access than before. The new village environment management committee is unable to control the access and use of CPRs by local residents and non-residents. These CPRs are supposed to be protected under the new rules, which are locally opposed by the resource users. It can be concluded that lack of mutual interest in resource use has contributed to poor management because collective action cannot take place in this village unless all stakeholders are involved in the planning and management processes. Most importantly, it is difficult for local people to act collectively as the market centre, Ikwiriri, is close by and fish sell at high prices which attract young local men and commercial fishermen and traders from outside the area. Therefore, the local lake Uba, which is linked to the floodplain, is in a situation of open access.

Further away from the commercial centres, the local residents of Mtanza/Msona village have managed to act collectively on fishery conservation, despite the fact that sometimes non-residents interested in the same resource visit the village. Here it is possible to still uphold parts of the old traditional institutions governing fisheries in the lake Mtanza, where measures for the protection of fish nurseries as well as well organised collective fishing events under a ritual leader are still held up and lead to a much more sustainable use of the fisheries than in the other village setting. However, it is interesting how the local villagers of Mtanza/Msona have managed to control the access to fisheries but have failed to control the access and use of the wildlife. Collective action has failed to take place on the wildlife resource because this resource is recognised by the state and the local residents have no incentives from the state to protect it from some local and external users, who are better organised than the state institutions. The availability of the game trade networks in the neighbouring district of Kisarawe and powerful people from outside has made it difficult for the villagers to organise and act collectively. The state as the owner of this resource lacks the necessary human

resources to back up its management against the illegal poachers. More details will be illustrated in chapter six.

Pasture, which is a new CPR in the Rufiji floodplain, used to be known or seen as ground cover but, since the arrival of the Barabaig pastoralist from the northern part of the country, the community members have organised themselves for collective action to protect and manage this resource. The economic values attached to the resource today have made it popular at the local level being uplifted by the animal products, which are fetching high prices in the local and regional markets. While the management of fisheries was not possible in Mbunju/Mvuleni, local people realise that they have to pull themselves together not to lose the pasture area, which has only now become valuable. Through collective action the community is likely to benefit from the revenues generated by the fees which the resource users pay for use rights and, as this process is in the starting phase not yet involving strong bargaining power of external actors, the locals are able to pull themselves together.

The capital city Dar-es-Salaam and one of the regional towns, Ikwiriri, have caused newly experienced political and economic effects in the Rufiji floodplain. As a major conclusion, this thesis, based on three CPR case studies, shows that not only the proximity to related resources affects its management but also the trade network and distance from the commercial markets determines the collective action in the management and use of the resources as well as the possibility to uphold or devise new local institutions. In this case the issue of homogeneity and group size have little effect on resource use and conservation. On the other hand, research also shows that management is resource specific: being successful in governing one CPR does not automatically lead to the success of the management of another CPR if commercial interests are very strong and bargaining power of outside actors high, linked to specific market possibilities. Last but not least, the thesis emphasises the fact that locally there are power relations leading to conflicts within the village setting and between villages. This means that it is important to see what aims different local actors have: Young men and women might have economic incentives different from the household heads and there are always political, wealth and other differences between households making collective action for the management of CPRs difficult.

This research is integrated in a comparative research project called African Floodplain Wetlands Project (AFWeP) of the Department of Social Anthropology led by Dr. Tobias Haller in which the changes in rules for the management of CPRs are studied in five African countries (Mali, Cameroon, Tanzania, Zambia and Botswana). The research for this thesis

was conducted within the framework of the Working Package 2 (formal IP6: Institutional Change and Livelihood Strategies, Department of Geography, University of Zurich, Switzerland) of the Swiss National Centre of Competence in Research (NCCR) North–South: Research Partnerships for Mitigating Syndromes of Global Change, co-funded by the Swiss National Science Foundation (SNF) and the Swiss Agency for Development and Co-operation (SDC).

The AFWeP group was set up to conduct research in six African Floodplain regions in a semi-arid environment, namely, Internal Niger Delta in Mali, the Logone Floodplain in Northern Cameroon, the Pangani-River-System and Rufiji-River Basin in Tanzania, Okavango-Delta in Botswana and the Kafue Flats in Zambia. The six regions were chosen because most of the resources in these areas (fish, timber, pastures, wild products, wildlife and agricultural land) are being held as common property and are characterised by extreme seasonal variations in natural conditions throughout the year and amongst the wetlands themselves and their adjacent territories. Moreover, in all areas one can find many different ethnic groups (see Haller et al 2005).

The selected areas of study in Rufiji were former pilot villages of the World Conservation Union (IUCN) project called Rufiji Environment Management Project (REMP) in the two villages both in the Rufiji floodplain but at different geographical positions. The information presented in this thesis was gathered through research in the Rufiji floodplain between 2002 and 2004. Special emphasis is made on institutional change caused by "Ujamaa-policy" in Tanzania, for this has tremendously affected CPR-institutions and management in the Rufiji floodplain as well as the other parts of the country.

The theoretical background for this thesis is based on New Institutionalism (North 1990, Ensminger 1992, 1998), which analyses changes in institutions caused by shifts in relative prices due to changes in market situations, infrastructure, and improvement in communication. As a result of these changes, institutions, organisations, peoples' ideologies and bargaining power are altered.

The design principles of Elinor Ostrom were also used as a tool for this research, which she identified through the analysis of long-enduring institutions for governing common pool resources (Ostrom 1990, Becker and Ostrom 1995). The research deals with the problems facing CPRs today in the study area, which were held and regulated in common in the pre-independence period. The drastic changes in old institutions governing the CPRs and the

emergence of new state institutions under the colonial and post-colonial government and conflicts characteristic of the study area today have been represented in this thesis.

The methodological part is mainly tools from social sciences, especially from social anthropology but as well as from geography. Structured and semi-structured interviews were conducted as well as structured questionnaires for the evaluation of economic, political changes, conflicts and change in CPR management. The role of gender and division of labour on activities related to access and use of CPR in the floodplain was widely tackled and relevant examples are spread in this paper but a specific and illustrated case is presented in chapter six dealing with fisheries issues.

This thesis paper is divided into nine chapters and the contents of each chapter will be briefly outlined here below.

In chapter one there is the introduction to the research site and the inhabitants of the floodplain where this study took place. The common pool resources are described briefly and the problem under investigation has been outlined. The key issues contributing to CPR overuse are analysed, which acted as the basis for this research. The theoretical part on CPR management and institutional change have been analysed as well. The historical concept of the CPR management has been included in this part. The design principles of Ostrom and the famous theory of Hardin and other CPR literature have been mentioned. The methodologies, objectives and the hypothesis for this research study conclude the chapter.

The second chapter starts with general geographical information on the Rufiji District and the floodplain as well. The local setting of the twin villages where this study was done is illustrated and the maps of the villages are included, which show the CPR positions in each village as well as demography of the two villages and household distribution. The national map indicates the geographical position of the study area and the Rufiji district. The impact of the floods has been analysed in the last part of the chapter.

In chapter three the ethnography and social organisation in the Rufiji Floodplain has been extensively documented. The ethnic compositions of the area and the ethno professional group's activities and political organisation in the pre-Ujamaa period have been dealt in the chapter.

In the fourth chapter there is historical information starting from the pre-colonial and colonial rule in Tanganyika (the present Tanzania) and the role of CPR management in the 19th century until the independence period. The independent and post-independence government

political organisation is extensively analysed as well as the economic setting since Ujamaa. In this chapter the breakdown of the traditional livelihood strategy of agriculture and its secondary impacts on the CPRs in the floodplain is also presented.

The fifth chapter is mainly on the political situation in Rufiji area in the post-independence period. The famous Ujamaa policy and its impact on the livelihood strategies of the Rufiji people is analysed as also the economic changes which took place in the Rufiji area in this period of Ujamaa. The introduction of new policies such as liberalisation, privatisation as well as SAP and ERP, after the Ujamaa policy had failed to turn around the economy and bring development in the area as well as other parts of Tanzania, are included in the chapter. The household budget and the prices of staple foods in the two villages are analysed as are the problems facing the local income sources.

In chapter six the ecological basis of the fisheries and the institutions, which governed the resource in the pre-Ujamaa period and their transformation in the colonial and post-independent government are the main focus. One specific case reflects the role of gender on CPR access. In the last part of the chapter collective action in the two-village setting is presented and reasons for the differences are discussed.

The seventh chapter is on hunting institutions in the Rufiji floodplain. The ecological and institutional set up and techniques of hunting are outlined. The changes in hunting institutions starting from the colonial to the present times have been analysed and conflicts related to this CPR use in the area and the changes of policies in the last years. The major part of the chapter deals with problems regarding the use of wildlife in the context of the management of the Selous National Park and why the state is too weak to manage wildlife. Even the locals are too weak to act collectively in order to protect this resource from outsiders, who profit from their high bargaining power and their location close to the wildlife trade routes. There are participative measures taken for this oldest protected area in Africa but they fail due to a weak state and the dismantling of local institutions. Wildlife is now seen as belonging to the state and access is given to highly equipped poachers, while villagers have to pay the costs of destruction of fields and attacks by wild animals such as lions. However, when local people fail to act collectively, the situation is clearly reflected by elderly people as a sign of violating traditional rules and regulations regarding CPR use.

In chapter eight pasture as a new CPR has been presented. The history of a pastoralist group and their effect in the new areas has been outlined. The emergence of new institutions to manage this resource in the Rufiji floodplain is part of the chapter. The reaction of the local

people towards the newcomers and the perception of the future is analysed and presented in the chapter.

The ninth chapter is mainly the conclusion and recommendation based on the results of the research and the experience made during the study. The annex and reference literature are included in the chapter.

1.1 Problem statement, objectives and major hypothesis

Research on which this Ph.D. thesis is built is focused on two village settings (these are twin villages, making therefore, four village entities studied) situated in the floodplain area of Rufiji District in Tanzania. The first is called Mtanza/Msona and is situated in the western part of the Rufiji floodplain closer to the Selous Game Reserve. The other is called Mbunju/Mvuleni in the central floodplain and is located closer to the town called Ikwiriri the newly booming commercial centres in the area. These two villages are situated in a semi-arid area and face newly rising problems regarding the degradation of the fisheries, forest and wildlife due to their new economic value (cash), the lack of proper institutional framework and internal immigration control. Also there is an increasing pressure on pastures today because of the continued influx of nomadic pastoralists (Barabaig) coming from the north of the country (Pangani, Morogoro, Mbeya). This new development of seasonal immigration of nomadic pastoralist groups not known before in the Rufiji District is now a problem for the Rufiji people who considered themselves as pure agriculturalists. Many of these problems facing the CPRs in this region are related to the post-colonial Ujamaa-policies. The Ujamaa policies contributed to the establishment of the villagisation process (meaning forced relocation of people from their ancestral land in the floodplain) and to the new liberalisation and privatisation approach of the government reaction on the structural adjustment programs (SAP) and requirements of the World Bank and IMF. Liberalisation and privatisation in the 1980s led to economic change and affected the livelihood strategies in the Rufiji floodplain well as the whole of Tanzanian.

Agricultural production declined tremendously because the small-scale farmer's subsidies were scraped off by the government under SAP policies and followed by another programme known as the Economic Recovery Programme (ERP). The co-operative societies closed down; the infrastructure broke down, the prices of basic household goods increased, no price control on non-consumable and consumable goods and the emergence of new towns in the rural areas contributed to the degradation of the social network in the rural areas. The local way of collective farming (*kidugu*) disappeared and free labour, which used to be available

through lineage ties and within the lineage, no longer exists. Additional working force is now only obtainable by paying cash to the casual labourers who originate from other areas or the lineage members and only households with sufficient manpower are able to cultivate sizeable acreages. After Ujamaa, the new policy of liberalisation and privatisation contributed to the opening up of the area and its natural resources to commercialisation, which was not the case before in this region.

This was leading to encroachment of the CPRs by new users coming into the area and competing for these resources with the local communities. The change of traditional institutions, which governed the CPRs in the Rufiji floodplain in pre-independence times, paved way for the new institutions with weak management capacities creating a de facto open access constellation in resources such as fisheries, wildlife, pasture and forestry. This goes back to the colonial time when the state took the entire management of the CPRs. However, the changes took place at the local level when traditional institutions were found to be still existing by then in many places and contributing to biodiversity conservation; but they are losing their local legitimacy at the same time with changes of political regimes and introduction of state policies. During the same period government regulations for the local people were still restrictive, hunting areas were opened up for commercial and safari hunting, while reserved areas of the Selous Game Reserve were extended into local community lands. At the same time new infrastructure such as roads and bridges were built, enabling distance resource users access to this formerly remote area. This control by a centralised government was taken over in the post-colonial time and applied in the later Ujamaa-policy. This policy forced the scattered villages into Ujamaa Village schemes under the notion of supplying the villagers with social amenities and the improvement of agricultural sector. While the improvements were not achieved, the negative impact of Ujamaa policy is still experienced by the Rufiji people today. The relocation of the villages to the new settlements reduced the powers of the traditional local chiefs (Wapindo) who managed the CPRs during the pre-colonial times through traditional institutions guided by customary by-laws and animistic beliefs embedded in each group's social-cultural values and traditions. These traditional leaders were replaced by village government officials who are under the control of local government on behalf of the central government. The new institutions in the post-colonial era have left the communities in the Rufiji floodplains without control of their CPRs while they experience all sorts of disadvantages, which have left them vulnerable to hazards/risks and have put the sustainability of the CPRs in jeopardy. Before Ujamaa local groups in the Rufiji Floodplain were organised along economic specialisation and formed ethno-professional

entities accordingly. This basic institutional setting was the foundation of the traditional CPR institutions, which changed during the Ujamaa policy. This policy demanded the dismantling of the ethnic territorial boundaries and led in the case of the Rufiji to the dislocation and forced amalgamation of different ethnic groups into consolidated villages. Ujamaa can be considered to have the general effect, which created open access constellation to all CPRs in the region and other areas of Tanzania through the reorganisation of traditional administration of the local lineage or clans, which opened the resources for all Tanzanians leading to the ideology of citizenship. While this created problems for sustainable use of the CPR from the start, the government still made efforts to implement state rules and regulations for fish, wildlife, land and forest through the newly established state institutions. However, with the end of the Ujamaa in the 1980s, the area remained open and attractive to external seasonal resource users from the urban centres as well as from big government development schemes such as Segeni irrigation looking for new livelihoods such as extraction of CPRs for the markets.

The influx of the newcomers with their new projects into the Rufiji floodplain today has made the management of the CPRs difficult for the local villagers because the new resource users have government protection and that makes it hard for the locals to exclude them from access and use. The local villagers have been left powerless and the CPRs are now less open access. This happened as traditional institutions, which managed the CPRs were abolished or weakened through the introduction of Ujamaa policy in Tanzania, which neutralised all the traditional institutions, which restricted governance and opened the lineage territorial boundaries leading to free movement of all nationals and promoting the ideology of citizenship. Although the state introduced new state formal laws to govern the management of CPR as well as land, these formal laws were hardly implemented by the same government due to lack of sufficient skilled human resources and money. This led to the situation where fisheries, wildlife, pasture and forest resources became open resources for everybody to harvest. Today these resources have been abused as everybody could go and profit from them without getting permission from the authorities entrusted for their management. Lack of proper institutional framework at the local level has made it difficult or complicated for the few state officials to control the well-organised cartels of both local and urban users to follow the rules of use. The state is unable to restore the former CPRs, which existed before the independent government took over the management and ownership of all natural resources in the region well as the rest of the country. After the total overhaul of traditional administration

the CPRs lost the social-cultural values, which were maintained by the local lineage or clan leaders in the pre-colonial and part of the colonial regime.

The absence of active state institutions and corruption rooted in the administration sector contributed to over harvesting of the CPRs in Rufiji floodplain, which is a common practice today. To solve such problems, external NGOs in co-operation with the district authority are trying to create awareness on the wise use of fisheries, forest and wildlife in the area. The local communities are supposed to participate in managing the CPRs in their area alone according to the new Land Act of 1999. Despite the awareness campaigns going on at the local level, the state is still recognised as the controller and owner of the CPRs today. However, local people as well as external users from the Ikwiriri Township or other areas of Tanzania want to use these resources for a livelihood but it is said that external resource users have different interests as compared to the local villagers and that makes collective action non-functional in this area. In addition, among the local Rufiji people there are problems because some groups or individuals are more powerful and the minority groups are fighting back through the violation of the newly enacted village by-laws, which have been crafted recently under the supervision of the NGOs to protect the CPRs from illegal poachers. The question is how can the demands and interests of all these people wanting access to fish, game and timber be satisfied without using too much of all these resources. There are no binding rules anymore to tell them when and how much they can use. The village government has no interest any more in managing these resources because the district authority is not co-operative on issues such as licence cost, conflict management, regulation, sanctioning and monitoring. According to traditional institutions, access to CPRs was connected to membership, kinship and local residence of different ethnic groups. Nowadays all people are Tanzanians and have therefore the right to get access to the resources. Rufiji had been a remote area for a long time but with the improvement of infrastructure and because CPRs sell well in towns while there are few jobs, forcing more and more people to immigrate to the area now. Immigrant people have not only an impact on the resources but have great influence on how local people organise themselves with regard to the economic, social and political organisation.

The building and opening of one Kilometre Bridge locally known as (Mkapa) named after the former president of Tanzania is seen as an achievement for the country to link southern districts with the capital city Dar es Salaam for business and administration reasons. However, this development is a positive achievement at the macro level but is not good news for the natural resources in the Rufiji floodplain. In the recent times more immigrants have been

attracted to the area and the competition of access to the natural resources such as land, forest products, fish, wildlife and pasture have continued to increase and their sustainability is not predictable (see picture 1,2 and 12 in the annex 3).

Additionally, the area is suffering from lack of sufficient rainfall and irregular rainfall as well as flooding which also affects the livelihood strategies of the Rufiji people. These unpredictable changes in rainfall patterns in the Rufiji floodplain have negative effects on agricultural production; pasture, fisheries and wildlife protection is an acute problem for the Rufiji people today.

The overall objective of this thesis paper was to identify and assess the degradation of these commonly used resources in the Rufiji floodplain area and to analyse the role the absence of binding rules and regulations plays in this process. Therefore the researcher was interested in understanding how and by which cultural means resources were managed in pre-colonial and colonial times compared to Ujamaa times and the times after Ujamaa. The research was also about to understand power relations and if there are conflicts over these resources and if there is a possibility to solve them. As the researcher was looking at two village settings, it was of interest to understand if there are differences between the two areas in regard of how local people were able to solve the problem of acting collectively in order to address overuse of resources and mismanagement.

The major research Hypothesis is:

De facto open access due to dismantling of local institutions and a weak state: Dismantling of local institutions and lack of strong state institutions led to de facto open access and contributed to the degradation of (fish, wildlife, pasture and forests) and powerful actors shape local rules for their gains.

No empowerment leads to loss of incentive to protect the CPRs. Thereby these resources leave the area for the market and locals do not have an interest in protecting them unless they are empowered to control them in co-operation with the state. But this only works if the state actors fulfil their duties and if feelings of trust between the village and the district authority can be increased.

Differences in ability for collective action due to the trade value of a resource and proximity to market possibilities: Not all the villages face the same problems and are capable of acting collectively. The collective action is rather difficult in areas closer to commercial centres while in areas further away it is easy for local people to maintain their traditional institutions.

This depends on the resource and the kind of marketing possibilities as well as being situated closer to market centres. It is difficult for the people to act collectively unless their livelihood is threatened and collective action will succeed in this case, if they realise that their interests will be achieved as well as maintained. In this case collective action has nothing to do nor could be linked to homogeneity group or market centres but to mutual interest and incentives and benefits for protecting the resource. This can be related to the case of pasture in the Rufiji floodplain where the local residents have pushed aside their social-political differences to act collectively to manage this resource for economic benefits. In the Rufiji floodplain today women are directly involved in the management of the CPRs. This has opened opportunities for women, who in the traditional institutions were restricted to household work. The gender roles are slowly addressed but more resistance is experienced on issues, which have economic values. Although some regions closer to the urban areas have opened up their cultural beliefs, the interior areas still hold their traditions, as men are favoured on particular jobs over women.

1.2 Theories on CPRs management and institutional change

Theories about common pool resource management (CPR-management) are often applied to the management of natural resources. Natural resources can be defined as 'valued goods the production of which occurs through natural processes or largely without human intervention and the supply of which is severely constrained (if not altogether fixed) by nature' (Young, 1982:1). Examples of natural resources are water, wind, oceans, fish and forests. Some of these natural resources are an example of resource systems (e.g. seas), while others are an example of the resource units produced by the system (e.g. fish) (see Ostrom, 1990:30).

Common pool resources such as fish, wildlife and pasture show two main characteristics: They are difficult to defend and they are sub-tractable. This means that they do not occur in such a concentrated way that they are easily defended by an individual (Becker and Ostrom 1995). But they are defendable by a group of people. The second aspect refers to the fact that a unit taken from the resource is not available immediately for other users any more. For renewable resources, one has to wait for the resource to renew itself (ibid). These characteristics of CPRs make them vulnerable to overuse if the free ride problem is not solved. The whole debate about the problem of overuse of CPRs came up with Garret Hardin's article "The Tragedy of the Commons" in which he pictured a pasture area to be doomed to overuse, like in a tragedy, because user rights are not defined. He wrote about "a pasture open to all", where each herdsman will try to keep as many privately owned cattle as

possible on this pasture, which is open for everybody, so nobody cares. Even worse, holding back oneself from using the resource would leave the remaining resource units to others, who do not care, so it is profitable to use as much as possible. On the other hand, if every herdsman keeps adding animals to his herd, this will ultimately lead to overgrazing. So, Hardin concludes, ``freedom in a commons brings ruin for all".

From the articles, *The Tragedy of the Commons* and *Political Requirements for Preserving our Common Heritage'* (1978), it can be concluded that Hardin believed that the system of common-property is the cause of degradation of natural resources. Since the system of common-property is to blame, Hardin advocates another system of property. According to Hardin, in a system of private property or state property over-use of natural resources would be avoided.

In many publications about CPR-management, Hardin's ideas are criticised (e.g. Feeny et al., 1992; Ostrom, 1990; Wade, 1992). According to the critics, Hardin assumed that common property is the same as open access, which is not the case. If a natural resource is used by a specific group of people, this group can decide who may use the resource and to what extent. Sustainable use of a commonly used resource is therefore possible (Feeny et al., 1990:7; Ostrom, 1990:90; Wade, 1992:102).

The common pool resources that fall between the concepts of private property, communal property and state control are vulnerable to vague definitions of tenure-ship. It seems that historically in academic literature, most such resources used to be grouped together and classified as "commons", which were often regarded as every man's property or as no man's property, depending on the theoretical viewpoint.

It is questionable whether this very general designation might not be misleading under certain circumstances[3]. The term "open access" is widely accepted for a situation where a resource is free for anyone to enter and extract units from it without seeking permission from the managing authority. However, it would be incorrect to say that all commons provide open access constellation[4].

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[3] "Commons: In Anglo-American property law, an area of land for use by the public. The term originated in feudal England, where the "waste," or uncultivated land, of a lord's manor could be used for pasture and firewood by his tenants." (*Encyclopaedia Britannica* at http://britannica.com)

[4] With open access regimes, nobody has the legal right to exclude anyone else from using the resource, but the tragedy of the commons may ensue because of overuse or destruction. In contrast, common property regimes, which regulate the use of so-called "common-pool resources," provide members of a clearly defined group with

There are different forms of tenure-ship to commons such as demarcated village grazing land, family land, interior lakes/ponds or sacred local forests, or graveyards that do make the issue of commonly owned property more complex. Theodore Panayotou (1990) draws an important division line between totally free assets and resources that exclusively belong to identifiable groups of individuals.

Common pool resource and open access are not used here interchangeably in this paper. Communal property is distinguished from open access by exclusion of other communities through the application of customary rules of access and management. Unlike open access, communal resources (common property regime) are said that to be often well managed but according to Hardin, the commons are doomed to degradation without proper regulation. It can be concluded that Hardin's theory referred to open access constellations but not communal resources, which are under the common property regimes, where collective action has been applied to manage the resource for the benefit of the member groups.

The work of Ostrom, especially the design principles are directly critical of Hardin's theory (see DPs list later in this paper). A considerable amount of interdisciplinary work has been produced examining CPR institutions (see Martin, 1992) after the work of Hardin's prophecy on the common property resources. The most exciting finding to arise is how the individuals involved in situations ripe for tragedy do have enough insight to co-ordinate their efforts and manage the CPR without external influence. Ostrom (1990) documents examples of self-organising and self-governing common systems that have worked well and endured for centuries including grazing and forest institutions in Switzerland, Japan and irrigation systems in Spain and the Philippines.

Apart from the above countries where common pool resources have been successfully maintained despite the change of seasons and political regimes, there are rural societies, which have managed to regroup themselves to defend their local resources for communal interest. In Sub-Saharan Africa the change of seasons affects the management of the natural resources such as water, forest, pastures, fish and agricultural land. Human activities such as opening of new land or clearing of the forest in favour of agriculture or grazing land for commercial projects such as irrigation, construction of dams, roads and bridges have contributed to the physical change of the common pool resources in many countries.

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a bundle of legal rights, including the right to exclude nonmembers from using the resource; here, the comedy of the commons is more likely.

Through the opening of new projects in areas, which were considered remote in the 1980s, much of the resources now have been wasted and their quantities have reduced resulting in over use of the limited resources and endangering the rural population livelihoods. The breakdown of traditional institutions in the south, which regulated the use, access and control of CPRs is said to have led to mismanagement and most of these CPRs are now state, private or open access property. It is common to find different property regimes in the same region and access, use, and ownership might be difficult to exclude.

For the case of the Rufiji floodplain, the CPRs are traditionally considered to be common pool resource and ownership of these resources is determined by seasonal changes between high floods and dry periods. Some resources change their ownership and rights of access in specific seasons of the year. Fish, water and wildlife are the best example of resources, which change their locality according to seasons affecting rights of use, access, and ownership in the Rufiji floodplain.

Natural resources held or shared by a group of private stakeholders are today often referred to as communal property or common-pool resource because they are jointly owned. In this thesis paper "common pool resource" (CPR), as used by Ostrom (1990) and Ostrom et al (2002), has been used as a neutral term referring to resources sharing the two basic characteristics. When I refer to common property I indicate a CPR, which is managed by a community, which is therefore owned by a group of people collectively, who are able to decide on who belongs to the group, has access rights and who can be excluded. In addition, the group is able to devise institutions for the regulated use of CPRs (timing, gear, procedures of collective use, monitoring and sanctioning devices etc).

Of course, there is not a clear line between pure open access situations and well-managed communal resources. Today corruption, conflict, technology, bad policies, relative prices, ideology or insecurity in tenure could always turn a communal resource into a state of open access constellation leading to the "tragedy of open access" but not the "Tragedy of the commons". Hence, communal rights to property must not only exist theoretically, but must be enforceable to attain any real value for the group of rights holders.

For private holdings, a strong link between secure ownership and incentives for long term management has been proved (e g Bruce et al 1994, Augustson 1994). A peasant has the exclusive right to control what she or he has sown on private owned land and that is why the improvement of the production through the additional use of manure is an individual decision to increase the yields well so as to maximise profits. But private property is no guarantee for

sustainable use, as Acheson (1989) shows, because if a CPR can be converted to cash which can be put in a bank or used to buy other assets, overuse of resources such as land or timber might be a rational economic option, if gains in an alternative business bring more profit than the sustainable use of the actual CPR.

Also in commonly governed CPRs economic gains are an important factor, as Ostroms' design principles show (principal two, relation between costs and benefits for CPR institutions, see below the list of DP's). But the main difference is that use is based on collective decisions and cannot just be decided by one actor alone. This, on the contrary, might prevent fast destructive decisions regarding the use of CPRs

Coming back to the tragedy of the commons, it has to be stressed that Hardin started the whole debate and intended by him to refer to the problem of population growth. Based on Malthus's prediction of a population explosion, many theorists in the mid-20th century suggested privatisation as an ideal solution to any problem of finite resources in an increasingly densely populated world (Demsetz 1967, Hardin 1968)[5].

Hardin's paper *The Tragedy of the Commons* has been one of the most cited ones, in which the thesis is built on a conviction that dilemmas of a certain type, exemplified by "the population problem" belong to a class of problems that has no technical solution[6].

The particular case of overpopulation is then generalised upon to show that any dilemma involving a scarce common resource such as fisheries, human habitat or grazing land, the use of which is not governed by enforceable rules, will logically lead to ruthless exploitation. "Freedom in commons brings ruin to all" Hardin states, although in traditional systems the tragedy is often held back through war or natural disturbance effects until the point when social stability allows for the numbers of man or beast to rise beyond the carrying capacity of the land.

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[5] Thomas Robert Malthus: English economist and demographer, best known for his theory that population growth will always tend to outrun the food supply and that betterment of the lot of mankind is impossible without stern limits on reproduction." (Encyclopaedia Britannica at http://britannica.com).

[6] This assumption of Hardin's should perhaps be seen as an implicit indication of that commons problems are better viewed from the perspective of the social sciences than the natural sciences. True or not, most of the authors of recent literature at least the written sources of the present study belong to various disciplines within the social sciences, such as political economy, sociology, institutional law and human geography. They often use game theory or other analytical tools for achieving explanations to observed phenomena, but they tend to favour empirical cases as foundations for their conclusions.

The tragedy of the commons scenario is the confusion between common property regimes and open access regimes related to common pool resources. In the latter, if it persists, clearly there is no incentive to protect the resources. What is special about the floodplain common pool resources is that there are short seasonal situations where the resources such as fish during times of high floods are largely spread all over. In this case we find open access but only for a short period. After the water has receded, common property regimes are applied again (see Thomas 1996). Open access is therefore an adaptation to seasonal changes and does not put into question the common property regimes. In fact, the situation even creates a potential incentive for excessive exploitation, through imposing a so-called Prisoners' Dilemma on the individuals who are in a position to make use of the resource[7].

The individual or group behaviours in a community are either influenced by institutional change or economic strategies forcing them to adapt new strategies for survival reasons. The free riding problem has been explained by Ostrom (1990) as the failure of institutions. In this approach institutions are seen as formal and informal rules of the game, such as constraints, norms, values and rules. These give incentives to groups and individuals, and also structure human action and interaction, especially in economic activities, in collective action and in sustainable resource use. Institutions such as property rights systems or the law are developed by the state or by local communities, where they are embedded in their culture (North 1990, Ostrom 1990, Ensminger 1992, 1998) but, according to Ostrom, are following a certain rule of principles. The important issue is that local groups of people are able to develop rules and regulations in order to manage the CPRs and therefore are able to act collectively and are not doomed, as anthropological research has shown (Acheson 1989, Ostrom 1990, 2002).

An important aspect of explaining how institutions operate is illustrated by the work of New Institutional Economists such as Douglas North (1990). He not only states that institutions matter for economic activities (old Institutionalism) but that if institutions work properly, they reduce transaction costs and the sustainability of the resource is assured. To make a transaction, one has to have information about product quality and about the other actors' behaviour. One also has to monitor one's trading partners and sanction them when they cheat. All these activities are costly because they consume time and resources. North however differs from other authors (such as Williamson) for he clearly does not argue that it is always

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[7] Hardin did not use the allegory of the Prisoners' Dilemma in his article, but the model has been referred to in the same context elsewhere (e.g. Ostrom 1990).

the best institutions that are selected but that the institutional process clearly reflects the bargaining power of the actors involved and therefore the notion of optimality cannot be sustained (North 1990).

Ruttan (1998) argues that CPR institutions follow the principle "restraint for gain". If users are able to agree on what rules should be operative, it becomes possible to take advantage of such renewable resources such as fish stocks when they are well developed and, therefore, most profitable. Because of this, very good fish-catches can be enjoyed at low costs. The primary condition for this is the efficient functioning of rules. Two forms are principally responsible for the development of such co-operative rules, as seen in CPR-institutions. CPR-institutions can develop under the rule of reciprocity (reciprocal altruism) or under a form of asymmetrical power relations (asymmetric reciprocity). The different actors can profit from co-operation, for example, if they allow access of external users to the resource, because in a later time they may be able to profit from the resources of those external users.

Managing CPRs collectively is a clear sign of collective action, which has since the 1960s been discussed as not an easy task. In his seminal work on the Problem of Collective Action, Olson (1965) argues that collective action is difficult to be realised if we are dealing with a large group (size) and if there is heterogeneity within the group. The latter argument has been illustrated by Ensminger 1992, Becker and Ostrom (1995) and by Ruttan (1998). Esminger shows how differences in interests make the management of a pasture area among Kenyan pastoralists impossible, leading to a dismantling of a pastoral commons. Becker and Ostrom discuss on a more theoretical level that if actors discount the future at a high rate and at different rates, collective action is difficult too. Similarly, Ruttan shows among shell fishermen in Indonesia that in a setting where different groups exist with differences in religion and economic interests, they find it harder to set up robust institutions, which are binding for everybody, than groups, which are more homogeneous. According to Ruttan, size is not a key variable.

Although theories about CPR-management have provided useful insights, they also have some shortcomings.

A first shortcoming is that most of the CPRs that are studied are characterised by single-use (e.g. fisheries). Resource systems are often characterised by multiple use and floodplains are a good example that we are dealing with multiple systems of resource use within one ecosystem. Therefore, availability and access as well as biological and physical conditions of a resource have to be discussed in this context. A second shortcoming is that many studies are

about self-governance (an exception to this is the literature about co-management). In many countries, particularly the more developed countries, governments are an important factor of everyday life. Even if they are not present physically, they are present ideologically (see later on notion of citizenship) so that one cannot speak of real self-governance. Management of a nature area involves many people with different interests and different tasks (e.g. users, national government, local government, and nature conservation groups) and despite the new forms of participative resource management today, local people hardly have the possibility to decide on how to use the CPRs.

A third shortcoming of the studies about CPR-management is that they are quite static. There is a search for conditions that are favourable to sustainable use, but the studies hardly account for changes in the natural resource studied or in the people of groups that are involved. There are locally between individuals and households as well as between groups and stakeholders considerable differences in interests and in bargaining power influencing the institutional design. Since natural resources themselves as well as the people involved and the rules they have developed change over time, a more dynamic approach is needed. Especially in human social systems we need to look at power relations, which are changing.

A fourth shortcoming is that studies about CPRs are mostly involved in management. Management takes place on an operational level and Policies, on the other hand, are usually directed towards a more strategic (long-term) level.

Finally, the notion that only small groups are able to act collectively has to be dismissed. Groups can be small and easily overtaken by more powerful groups, for example. Also, it can be shown that larger asymmetrical groups might be better able to act as a group for decision structures are easier enforced. On the other hand, heterogeneity in interest is a factor but, as I will show, not the only one. Collective action successfully done in one resource setting does not mean that in another setting it can be done by the same group as well. As I will show in my thesis, collective action is very much related to the economic value of a resource (relative price), the proximity to market centres and the specific interests of different powerful groups and actors involved.

1.3 Common-property resource management

The term common property resource refers to a natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits from its use. To understand the process of organising and governing

CPRs, it is essential to distinguish between the resource system and the flow of resource units produced by the system, while still recognising the dependence of one on the other.

The decisions and actions of CPR users to appropriate from and provide a CPR are those of broadly rational individuals who find themselves in complex and uncertain situations. "An individual's choice of behaviour in any particular situation will depend on how the individual learns about, views and weighs the benefits and costs of actions and their perceived linkage to outcomes that also involve a mixture of benefits and costs".

The physical components of a CPR can, in other words, be seen as a resource base (system) and its harvest (units). In the case of the pasture, "resource base" refers to the land itself, including groundwater and growing vegetation. The grass becomes "harvested" first at the point when it is cut or grazed by the community users. Domestic animals, finally, should here be seen as mere appropriation 'tools' managed separately for the purpose of effectively extracting resource units from the system[8].

We then have the group of individual resource users (appropriators), whose direct and indirect interactions with the CPR system result in a situation that can be described and analysed from a management perspective. An example of a management decision important for livestock-supporting systems is to choose a way to control the aggregated size of the herd, a decision that might have to involve strategies on two levels. For as Bruce (1990) observes, "there are two broad categories of strategies for community control: Exclusion of non-members of the group, and control over use by members.

Studies of CPR situations may be directed towards at least three separate levels of analysis, that is to say, the Constitutional level, the level of collective choice and the operational level (Ostrom 1990). The higher layers each provide a framework of rules, within which choices are made concerning the institutional structure of the nearest lower level. At the operational level, choices relate directly to day-to-day interaction with the resource itself. Of course, these layers are somewhat interwoven, and it can therefore be difficult to perform analysis at one level without regarding the other layers in the hierarchy, at least as influencing factors.

In a theoretical sense, management in a CPR context seems to be a matter of overcoming the prisoners' dilemma, controlling free riding tendencies and avoiding the tragedy of the

[8] Several anthropologists and human geographers would probably argue that the role of livestock in rural societies includes a lot more than only production benefits. The claim is true, and will be dealt with further on the pasture section in this paper.

Commons. So what does it take, more precisely for a group of appropriators to do this? What are the important features of a successful local CPR management? Of course, requirements do not look exactly the same for all resource-sharing communities worldwide, but there are certainly some common characteristics to rely on in order to facilitate analytical comparison and synthesis. The structure of the study owes a lot to Elinor Ostrom's (1990) methodological framework for reviewing case studies on CPR management. Ostrom approaches the subject with a focus on sustainability aspects of institutions. She argues that CPR owning communities are not necessarily incapable of solving their local problems of control and provision. Given the right circumstances, they can do precisely that, and create functioning mechanisms for a sustainable use of the CPR.

Over the years, in publications about CPR-management the attention is shifted towards conditions for sustainable use of commonly used resources. In her book *Governing the Common*' (1990), Elinor Ostrom presented eight design-principles that seem to be favourable for sustainable use of commonly used resources.

The core of her findings is expressed in a set of eight design principles (DPs) characterising a number of "long enduring CPR institutions" (see DPs table below).

Table 1: Design principles

1. Clear defined Boundaries
Individuals or households who have rights to withdraw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself.
2. Congruence between appropriation and provision rules and local conditions
Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labour, material, and/or money.
3. Collective choice arrangements
Most individuals affected by the operational rules can participate in modifying the operational rules.
4. Monitoring
Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the Appropriators or are the appropriators.
5. Graduated Sanctions
Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offence) by other appropriators, by officials accountable to these appropriators, or by both.
6. Conflicts resolution mechanism
Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials.
7. Minimal recognition of rights to organise
The rights of appropriators to devise their own institutions are not challenged by external governmental authorities.
8. Nested Enterprises: For CPR that are parts of larger systems:
Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organised in multiple layers of nested enterprises.

Source: Ostrom (1990)

The design principles are not the solution of problems facing the CPR today but a tool to enable CPR-institutions to operate properly, if these principles are adapted in the management. The DPs can reduce the costs involved in the management of the CPR and the sustainability of the resource will be assured.

The other interesting area is how CPR institutions are established and maintained locally. The American Economic-Anthropologist Jean Ensminger, in her book *Making a Market*, has given tools contributing to overuse of resources and conflict at the local level. In her work based on the Orma, a semi-nomadic pastoralist in northern Kenya, she looked at changes, which were and are still taking place and how the livelihood strategies of different families and individuals have been affected due to changes of market economy, political and social

institutions. When analysing changes, Ensminger finds it necessary to look at the individual motivations of different actors and see how the role of social constraints and incentives influence what people strive for. Therefore for Ensminger, an interaction between the endogenous aspects of a society in which the individuals are living is composed of institutions, ideology, organisation, and bargaining power. She finds ideology as the way people explain the world and how they value things. Institutions enable co-operation to work at different levels. Organisation refers to a body in which people organise themselves and act collectively for specific interests. Bargaining power means the ability of an actor to monopolise the system for individual gains.

The bargaining power of individuals originates from social status, wealth or the ability to manipulate ideology (Ensminger 1992: 5-7). These four endogenous spheres (ideology, institutions, organisation and bargaining power) influence one another and are themselves influenced by external factors. These external factors are the social and physical environment, population and technology, which together influence "relative prices". Ensminger speaks of relative prices because the decision taken by an individual depends on the value of a good in relation to another good.

The work of Ensminger and Ostrom's DPs was the base for Rufiji floodplain research. It is these aspects, which were focused on in the research. How has the bargaining power changed or newly distributed by changes in Ostrom's design principles (DP) can be found? Is it true that users with more bargaining power stemming from their political or financial power (locally or through the governmental institutions) are able to privatise former CPRs or manipulate the institutions governing access to CPRs? Additionally, it was interesting to see what kind of strategies those former users who lost their CPRs in the Ujamaa policies were applying to get access to CPRs in areas claimed as ancestral lands in the floodplain today.

1.4 Methodology

The Rufiji floodplain site was chosen because of the unfolding of complex resource use among heterogeneous groups with different cultural and religious background ideas towards the conservation and proper use of the CPRs. This study illustrates the complexity of the interplay among various actors with conflicting motives and objectives.

This study made use of both primary and secondary data sources. Primary data were collected from field surveys in the twin villages heterogeneous in population composition and both situated on northern side of the Rufiji floodplain. The Selous Game reserve for wildlife conservation, which is under the management of the ministry of tourism, was targeted for this

study too because of the game and its physical location. Part of the area occupied by this Game Reserve used to be community land before it was nationalised by the colonial government at the first stage and the independent government maintained it for wildlife conservation. The community members are supposed to be given first priority in decision-making and benefits accrued from the game reserve to be channelled to village development projects. The role of an individual towards the conservation of wildlife in the community land was dealt with and the distribution of the revenue is one of the crucial issues the study investigated. The villages were chosen with the help of district government officers and IUCN (REMP), which was by then working in the Rufiji floodplain and the delta.

The survey sample was randomly selected from the village household lists, which had already been compiled by the village executive officers. For each village further interviews were carried out with selected representatives of the village government who are involved in the implementation of the community management projects (CMP): the village chairman, the village executive secretary and the secretary of the Village environmental Committee were interviewed. In total 150 interviews were carried out, representing a sampling fraction for each community of 20%. In each household one respondent was interviewed; that person being, for as many cases as possible, the main decision-maker or head of the household in question. The interviews were gender equality because the House head women were given equal opportunity like any household headmen.

Data collection techniques such as structured and semi-structured interviews, photos, and focus group discussions and the use of key informants, especially old people and other key persons in the community of Rufiji who have a historical perspective of this area and pre-Ujamaa resource use were interviewed and their information recorded. In addition to the interviews and the observations of the researcher, physical surveys of the activities taking place in the study area were conducted to facilitate understanding of the situation and also to crosscheck the information, which the respondents provided.

The questionnaires consisted of twenty five questions in a combination of fixed and open-ended formats in five sections: (I) Respondent and Household information (ii) attitude towards CPRs such as wildlife, fishery, pasture and agriculture (iii) conflicts and the perception of the villagers on the future and economic activities.

The data collected from these sections are used for the analysis presented in this thesis paper. Secondary data was obtained from institutions such as the University of Dar es Salaam, Bureau of Statistics, Ministry of Natural Resources and Tourism (MNRT), Rufiji Basin

Development Authority (RUBADA), IUCN (REMP) Rufiji Environmental Management Programme, and National Environmental Management Council (NEMC). For a wider perspective on the issues in question, varied literature has been reviewed.

Findings from this study will open up many interesting questions and should stimulate further inquiry into the complex processes involved in common pool resource management and conservation of natural resources with the involvement of local people and other external actors interested in the CPRs exploitation. Apart from natural processes in the floodplain, such as rivers changing courses, more complex relationships among individuals, institutions, and government ministries will pose a formidable challenge to researchers to understand and resolve.

2 Ecosystem and Local Setting

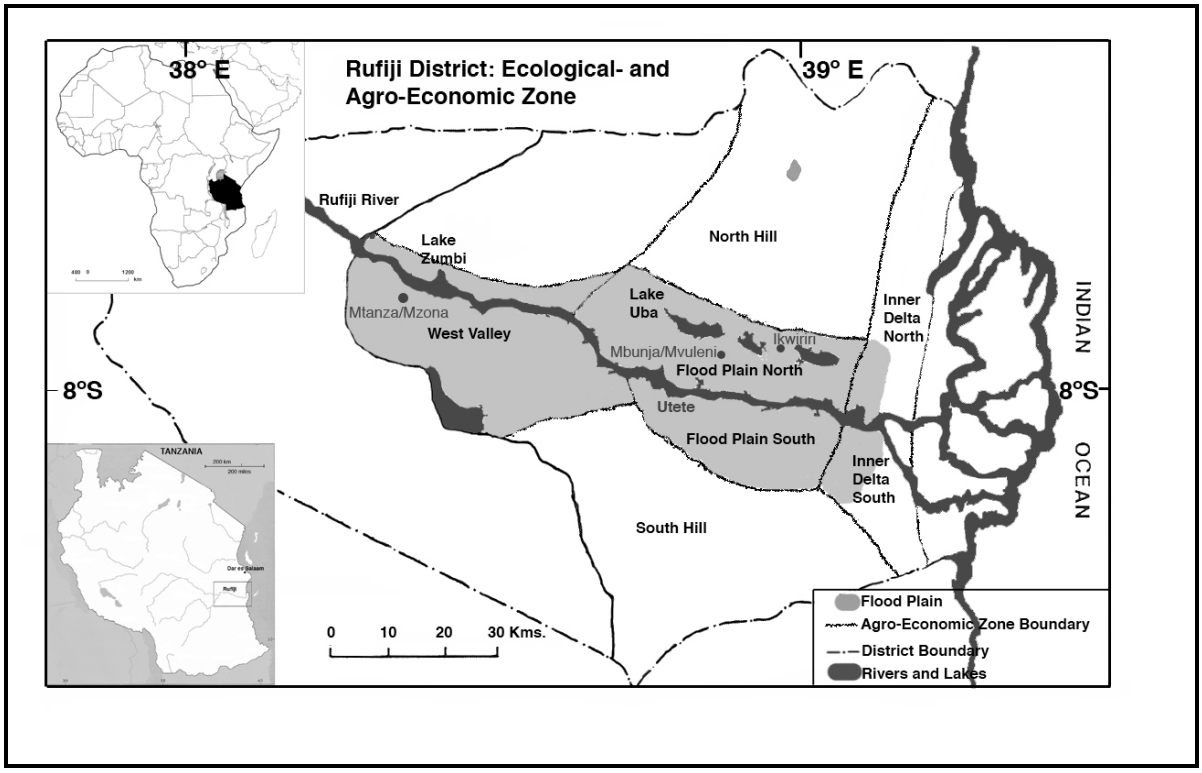
The prominent feature in the Rufiji District is the Rufiji River, which is 177.4 km long with a large floodplain and a delta. The river gives the District its geographical, agronomic and social shape, dividing it into the central the floodplain, which is seasonally, inundated covers approximately 1'450 km (Turpie 2000). Rufiji River is the major Tanzanian River, which has a catchments area of about (19215 km) one fifth of the country's territory. The average annual precipitation in the district is 800–1000 mm. The area is therefore semi-arid and the only reason for its riches in resources such as fish, wildlife and agricultural area is the large amount of water transported by Rufiji River and its tributaries such as the Great Ruaha and Kilombero Rivers. Together, they combine to form the Rufiji River Basin, extending for almost 177'000 km^2 or about 20% of the surface of Tanzania has 10% of Tanzania's population and 30% of its surface water. In eastern Africa, it is second only to the Zambezi River in terms of fresh water transport (Sorensen, 1998). Another important feature of the lower Rufiji floodplain is the presence of Permanent Lake system. There are altogether 13 Permanent Lakes on the floodplain (Hogan et al., 1999), occupying a total area of 2'850 ha, which is more than 50% of the surface of standing water bodies in the valley (Mwalyosi, 1990, Ochieng, 2002). These Permanent water bodies are connected to the River Rufiji via small inlets or channels. Seasonal discharges of fresh water get into the lakes through these inlets. The vegetation in the floodplain is influenced by climatic variations, rainfall and soil conditions. Its vegetation is mainly formed of tropical forests and grasslands. The floodplain itself can be subdivided into zones reflecting the depositional pattern of the sediments with the coarser less fertile material being predominant in the upper reaches and finer material occurring in the lower reaches. The zones are the upper, middle and lower floodplain, which together with the delta

form four agro-economic Zones (Agrar and Hydrotechnik, 1981). Grasses, including Echinochloa pyramidalis and Oryza spp, dominate the Rufiji floodplain. The permanent swamps along the rivers are cyperus papyrus swamps, with the normal associated species. Upstream, the rivers carry gallery forests, with zones of inundation and pockets of swamp forest. This includes the Zambezian elements and in south-western districts comprise of such species as Aporrhiza nitida, Ficus congensis, Garcinia smeathmannii, Gardenia imperialis, Ilex, etc.

The fauna in this region includes the crocodylus niloticus, terrapians, varanus niloticus, and some snakes occur throughout most parts in the floodplain. Among interesting birds, Scotopelia peli is locally very common along the more densely wooded banks of the Great Ruaha. Several species of bats frequent the river line woodlands, including fruit bats and false vampires. Hippopotamus amphibious is widespread, and Tragelaphus spekei occurs in the permanent reed swamps. The floodplain is flooded during the long rains in the months of February to May. The floods replenish the floodplain lakes with fish and increase the volume of water in these lakes. Three of the main lakes are situated south of the River Rufiji and ten lakes lie to the north of which five belong to the Tangalala lacustrine wetlands.

2.1 Research Site Description

Map 1: The geographical position of the research villages

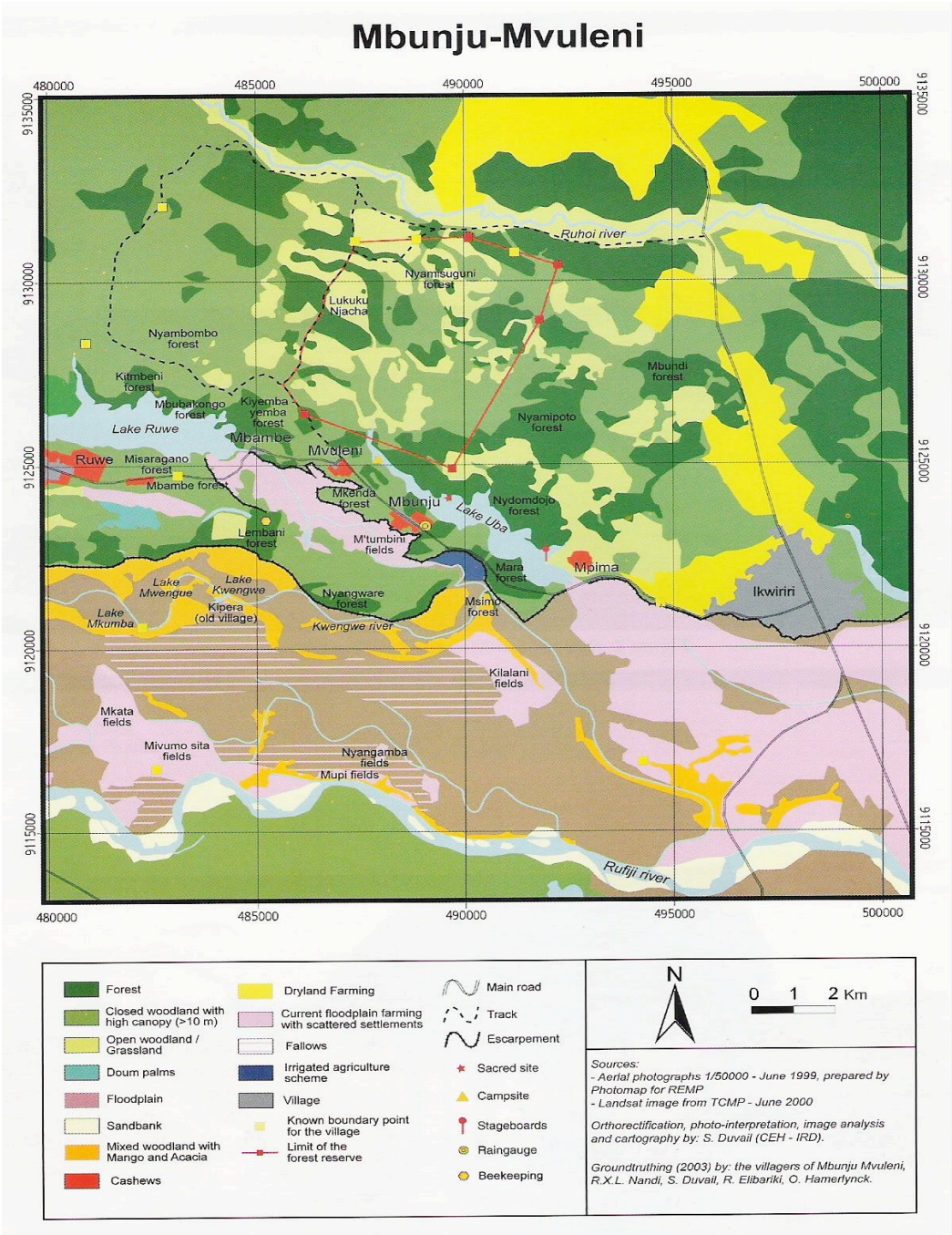


Source: REMP 2002

The areas of study are two-twin villages in the floodplain namely, Mbunju/Mvuleni in the central floodplain and Mtanza/Msona in the western floodplain. The Rufiji area has opened up recently due to the improvement of infrastructure and privatisation policies, creating new interests on CPRs use within.

Mbunju/Mvuleni village

Map 2: Mbunju/Mvuleni village



Source: REMP 2002

Mbunju/Mvuleni is located in the central floodplain area of Rufiji District on the northern elevated area of the Rufiji River, the biggest river in Tanzania. The village is 54 km^2 from the district head quarter Utete and 15 km^2 to Ikwiriri Township. It is accessible throughout most of the year by an earth motor road. It is one of the 98 registered villages in the district and shares boundaries with Mngaru to the west and North, Utunge/Nyanda, to the South,

Mgomba/Ikwiriri Township to East and Ruwe village to the west. The main village settlements and farming areas are approximately 10 kilometres north of the main Rufiji River. The main settlement is in two sub-villages of Mbunju and Mvuleni village along the road that crosses the village from Ikwiriri to Mkongo (division head quarter). Mvuleni sub-village is a few metres from Lake Ruwe and likewise Mbunju sub-village is a few metres from Lake Uba, which is shared with Mpima sub-village (see map of village 3). The villagers are used to maintain two homes, one being a permanent home (Ujamaa village) and the other a farmhouse (Dungu) in the floodplain located inside the floodplain[9]. The farmhouses are the original houses of the villagers before Villagisation took place in the 1970s. Thereafter the farmhouses in the floodplain were declared illegal by the state and the government burned down many of these houses (dungus) through the deployment of the military forces in 1974 (operation Vijiji)[10]. The majority of the villagers are Ndengereko ethnic group and the rest are mixed ethnic groups such as the Makonde, Ngindo, Pogoro, Zaramo and Hehe. The people's religion is mainly Islam, but still the villagers believe in spirits (animistic believes) and have special shrines spread all over in the community forest as well as along the shores of lake Uba for worshipping. The Mbunju people live in five sub-villages namely (Mbunju, Mvuleni, Kilalani, Mupi and Mpima). The people of Mpima sub-village were moved to Mgomba Village in the 1974 villagisation programme. However, some families returned later and so there is confusion about the administrative location (boundaries) of some of the Mpima households. Similarly many of the Mupi households are physically located within the lands of Mbunju but are not officially registered in Mbunju/Mvuleni village. At Mbunju/Mvuleni, the official boundaries between the sub-villages of Mpima and Mupi are unclear and have been subject to disputes in the recent times. This complicates administration as the Mupi people claim ownership of land in the floodplain, however, registered in Ikwiriri during villagisation process in the 1970s. The Mupi people do not recognise the new state villagisation process as their relocation was done by force to Ikwiriri village to meet the government required number of 250 households in order to be registered officially as a village. It was that only through this

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[9] Dungus are traditional houses for the Rufiji people before there relocation from the floodplain to the highland. Today these house are called farmhouses to avoid conflicts from the authority because the state condemmed such structures in the 1970s. However, the natives are not allowed to stay in the floodplain many of the old generation spend much of their time in the floodplain for farming activities. The highland houses are partly used in the year. See picture on dungus in the annex 1.

[10] Operation Vijijini was a term used during the relocation of the people from their former settlements in the south floodplain to the new villages, which were situated on higher grounds north of Rufiji River.

a registered village was to receive the social amenities and other support from the government.

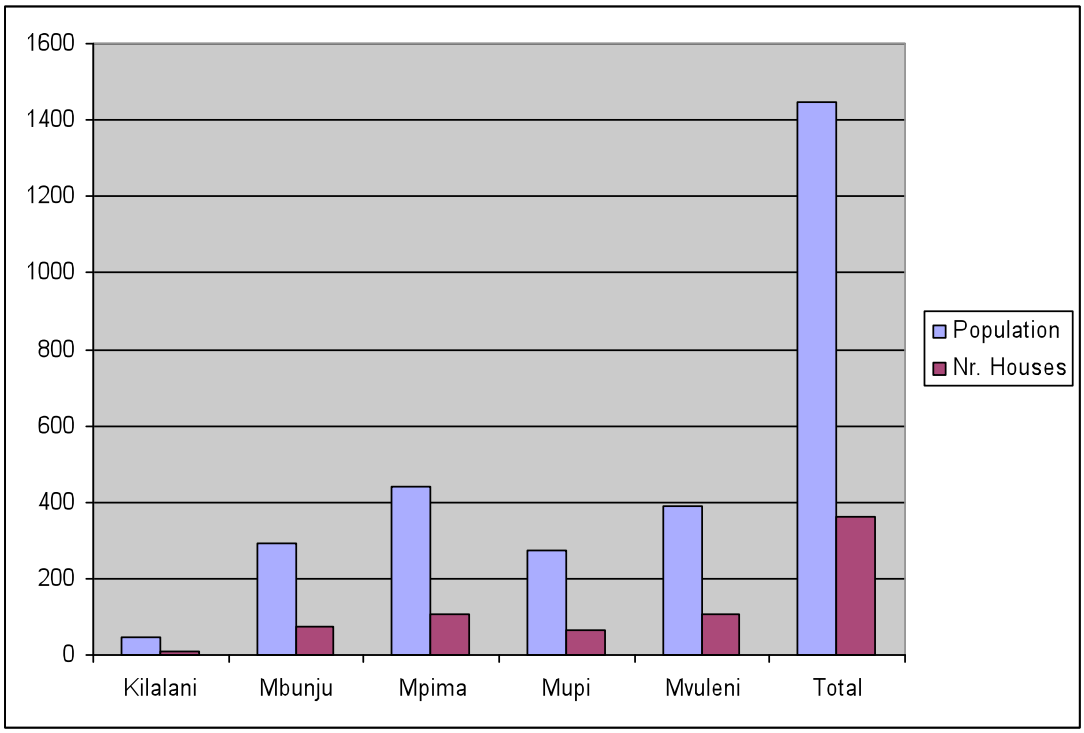
Today the Mupi people argue that their ancestral spirits are resting in the floodplain their former homesteads and it is necessary to get access to the floodplain to make rituals and exploit resources, which in order to be registered officially as a village. It was that only through this a registered village was to receive the social amenities and other support from the government.

Today the Mupi people argue that their ancestral spirits are resting in the floodplain, which were their former homesteads before relocating to the current Ujamaa village closer to Ikwiriri market. This people find it necessary to get access to the floodplain to make annual rituals and exploit resources, which were formerly used by them before the villagisation process of 1970s. Officially all the former inhabitants of the floodplain lost their traditional ownership of the land as well as resources after the government demarcated the new villages in the highlands. According to the Ujamaa policy the inhabitants were allowed only to access land within their new villages and the formal state laws dismantled traditional ownership of land.

However, men were traditionally considered, as the household heads, today there are some households headed by female as well in this village of Mbunju/Mvuleni. The female-headed household are smaller in population because some of the household's men are absent, single mothers, divorced or the children had migrated to urban areas. The evidence of the significance of migration process in Mbunju/Mvuleni is shown by the extremely unbalanced sex proportions of the village population. No distinct class stratification can be observed in Mbunju/Mvuleni, but social and economic inequalities exist to a certain degree. Taking traditional capital namely land, domestic livestock, as well as modern possessions like furniture, radios, bicycles etc. The Mbunju/Mvuleni is not a typical traditional rural village in this remote area, but is composed of diverse ethnic groups due to villagisation process and the continued internal immigration of people from other region in search of the CPRs. The settlement pattern in this village is linear system divided by an earth road dividing the village into two equal parts. The villagers maintain intense external contacts due to good transport system between Ikwiriri town and the divisional Head quarter Mkongo, which is one hours walk from Mbunju/Mvuleni village. The villagers have access to the floodplain for various activities such as farming, fishing, building materials and the collection of traditional Medicines.

According to the census 2002, Mbunju/Mvuleni village has a population of 1'445 people, 360 households in five (Vitongoji) sub-villages (Kilalani, Mbunju, Mpima, Mupi and Mvuleni). The village records an average of 4.01 persons per household, which is smaller than the Rufiji District average of 4.49 persons per household.

Figure 1: Population and average size per household in Mbunju/Mvuleni.



Source: Meroka, Patrick 2004

The village population is taken as the total number of those who live in the village and use common pool resources for the major part of their income, regardless whether, they are officially registered there. The numbers of household in the village are fewer as compared to the village executive officer's records. It must be remembered this study was counting the number of household users of the common pool resources rather than the entire registered population. In this village the number of land and natural resource users is higher than the number of registered household. There are cases where user of village land and resources are "outsiders" registered in other villages and that are why the difference occurs. The village is blessed with large concentrations of wild animals from the month of August through December in each year. The majority of the wild animals come all the way from Selous Game Reserve following Ruhoi River (see map 3). It was said the presence of water and plenty of grass in the village land attract these animals to the village land. The main animals found here are the same as those in Mtanza/Msona, which borders the Selous Game Reserve. The hunting

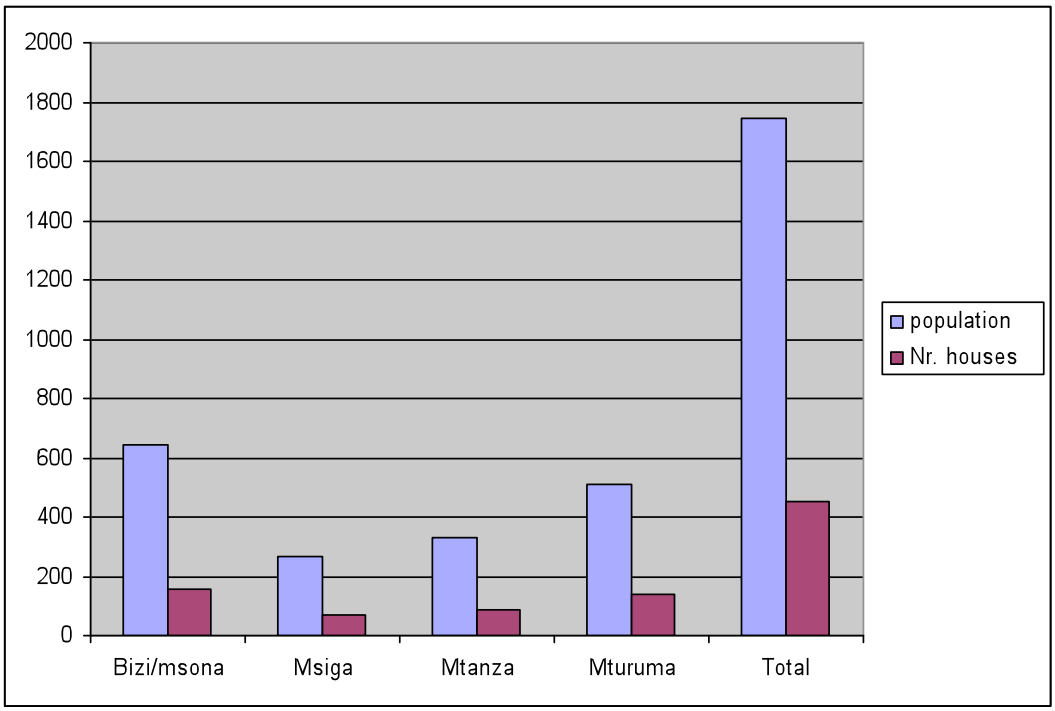
of these animals is common but most of it being illegal because neither of the hunters gets licences from the District wildlife officer nor do they report to the village council of their activities. The village being near to Ikwiriri Township, there is ready market for poached meat, which can't be locally consumed due to religious reasons.

A large number of the villagers in Mbunju/Mvuleni have farms in the floodplain and consider farming as their primary economic activity. Most of the household in this floodplain practice inter-cropping system, where rice and maize cultivation is done twice a year. The main cultivation areas are in the floodplain, which is between the village settlement area and the Rufiji River and this is where the villagers spend most of their time in the year. The villager's staple food is rice and maize, which is milled using a machine in Mvuleni (Mbambe) or pounded by women at home. The household eating behaviours are the same like the one of Mtanza/Msona where rice, beans, fish and wild meat are preferred by the local people and considered as traditional dish. Every household use wood for fuel and usually cooks on "three stones" locally known as (mafiga matatu), even in the stilt houses (dungus) they put a mat and soil under the fireplace to protect the floor of the "dung" from burning. Fishing is secondary activity for most villagers but a rescue from hunger when the agricultural production declines or the harvest is destroyed by the wild animals. Other natural resources of importance to the villagers are pole for building, trees for timber cutting and firewood, canoe building. Logging and timber harvesting in the reserved forestland are common/ regular activities in the village. It was said the traditional boundaries of the forest within the village land is known and the villagers respect them when it comes to natural resource harvesting to avoid unnecessary conflicts with the neighbouring villages.

2.2 Mtanza/Msona Village

Mtanza/Msona is inhabited or occupied by the Ndengereko ethnic group, known as Waruhingo in this area. There are some other ethnic groups such as Matumbi, Hehe, Pogoro, Zaramo, and Makonde in this village but are considered to be a minority. Islamic religion is widely spread in this village; however, some minorities belong to other denominations. The villagers believe in spirits and have special shrines, spread all over in the village forest and a long lake Mtanza for special rituals. Each household has a shrine for private offering, but such shrines are also found in the forest. According to the census 2002, Mtanza/Msona village has a population of 1'744 people, 455 households in four sub-villages (Bizi, Msiga, Mtanza and Mturuma). Most households have a male head and an average size of 3.8 persons per household, which is smaller than the Rufiji District average of 4.9 persons per household.

Figure 2: Population and number of households in Mtanza/Msona



Source: Meroka, Patrick 2004

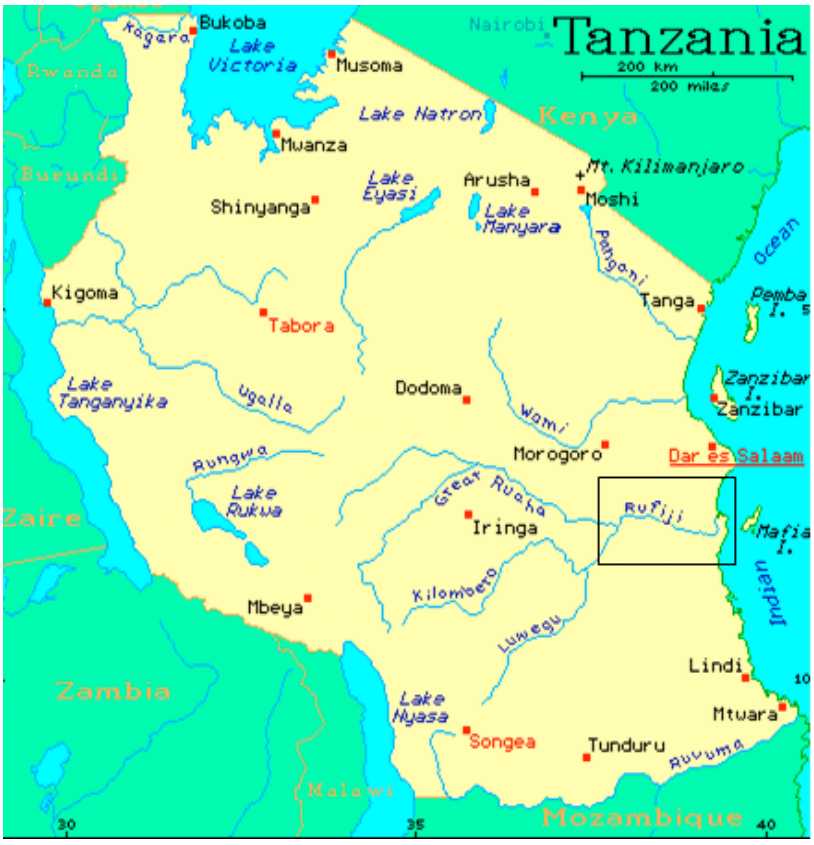
Mtanza/Msona is one of the villages in the western floodplain situated on elevated place closer to Rufiji River as well as Lake Mtanza. The residential area is located on the northern side of the river but most of the economic activities such as cultivation are done south of the river. The settled area is small, stretched a long Rufiji river, on the northern side, unless under extreme cases the unpredictable floods do not affect this area and the villagers have their traditional houses in linear settlement permanently. The villagers therefore maintain two homes, one in the settlement area on the highland (Ujamaa village) and the other in the floodplain where cultivation takes place. The homes in the floodplain are temporary and are known as (dungus), the stilt houses that keep them high above the floods and fairly safe from the wild animals (see picture in Annex 1). The village land is said to have a width of approximately 12 kilometres and extends Southwest wards to the Selous Game Reserve boundary and North-eastwards to the Kisarawe District boundary.

The village is blessed with large concentrations of wild animals from the month of August through December in each year. These animals are attracted by the presence of water and forage on village land. The main animals found in the village during this period are elephants, lions, buffalo, hippopotamus, crocodiles, leopards, giraffes, zebra, impala, hare, sported hyenas, yellow baboons, monkeys, bush pigs and several snakes and birds. With such a variety of wild animals hunting is a common practice. Not all hunters report to the village

council and therefore it is assumed that their hunting is illegal. Hunters from Kisarawe District and Dar es Salaam conduct hunting on the northern portion of the village while tourist-hunting companies do it on the southern portion on the village land.

The villagers consider farming as their primary economic activity. Fishing is taken to be secondary activity by most of the villagers and a rescue during hunger and floods period. Fish catches are boosted probably by the raised water level in the flooding season. Other natural resources of importance to the villagers are pole for building, trees for timber cutting and fuel wood, canoe making logs and wild palm products. Many households experience food shortage every year caused by floods, wild animals or by droughts. Many households today have a diversity of activities for survival in this semi-arid region. The households with secure livelihoods are not dependent on one economic activity but have a range of sources of income. The villagers survive by buying food with cash earned from fishing and logging or relief food supplied by the government.

Map 3: Location of Rufiji River & Floodplain in Tanzania



Source: Havnevik (1993)

The Rufiji district is between the latitudes 7.47° and 8.03°S and longitudes 38.62° and 39.17°E. The District covers an area of approximately 14,500 square kilometres, making an average population density of 14 persons per km^2. The Rufiji district has an overall mean altitude of less than 500 metres. Its vegetation comprises mainly tropical forests and grasslands. The average annual precipitation in the district is 800–1000 mm. A prominent feature of the district is the Rufiji River, with its large floodplain and delta, the most extensive in the country. The temperature ranges from 25°C to 41°C throughout the year with two rainy seasons. The short rains (Vuli) start from October to December and the long rains (Masika) from February to May with an annual average rainfall of (1,096 mm) at the coast to semi-arid (600mm) levels in the western floodplain and has a generally bimodal pattern with wide annual variation (M. Yoshida 1974).

This area is semi-arid, characterised by flooding during the rainy season. Most of the resources (such as fish, forest, pastures, water, wild products, wildlife, agricultural land) are today held as common property and characterised by extreme seasonal variations in natural conditions throughout the year.

2.3 Floods in Rufiji Floodplain

Hafslund (1980) and Hamerlynck and Duvail have discussed important flood characteristics of Rufiji floods (in prep.). The long-term trend of the Rufiji River floods has been discussed by Savile (1945), Bantje (1979) and Ochieng (2002).

There is little reliable data concerning the floods of Rufiji. But there is evidence of major floods in the last century. In 1875 a flood is said to have changed the course of the river from the north to the south edge of the river valley in the areas north of Utete (Beardall 1881 and Jack, 1957:6). These studies reveal that prior to 1935 serious floods with major crop damage occurred only once in every 12 – 15 years. Recorded serious floods before 1935 occurred in 1875, 1890, 1905, 1917 and 1930. After 1935, serious floods with damaging effects to crops occurred at a much higher frequency (1936, 1940, 1942, 1944, 1945, 1956, 1958, 1959, 1962, 1963, 1964, 1968, 1972, 1974, 1979 etc).

The remarks of the colonial district agricultural officer (quoted in Jack 1957) said that the people through the names they attached to them remembered floods, which occurred early this century. The flood of 1905 was called faya, the local name for machine gun, which was first

seen by the local people during the MajiMaji uprising[11]. The flood of the 1917 was the heaviest of this century and was named ndege (bird), as this was the year in which the first plane was seen in the area. It is difficult to predict the behaviour of the river with any accuracy because the flooding is related both to rainfall in the up-country catchment and, to socio-economic factor (Savile 1945: 70).

Savile (1945) who was the first to observe this pattern used the existing rainfall records (prior to 1945) and found no evidence of increased rainfall. He therefore concluded that the cause must be increased run-off, which was also associated with the occurrence of sharper flood peaks (more rapid rise and fall of water). The increased run-off was attributed to the changes in the land use pattern on the Upper Rufiji Catchments, such as deforestation due to increased agriculture. Thus, it can be concluded that the Lower Rufiji river catchments will potentially face the threats of more floods, which will be influenced by the increasing rainfall in the Upper Rufiji catchments as well as the anthropogenic pressure.

The major characteristics are as presented (see figure below) which consist of a 29 year record (from 1957 to 1984) of the flood discharge data. The discharges from Luwegu tributary are on the other hand irregular and often of very high magnitude. Most of the early floods (January flood), which are often destructive comes from Luwegu. The regular non-destructive character of the Kilombero floods is attributed by the fact that the Kilombero drains the still well forested highlands along the western escarpment. The flows through a substantial floodplain with braided channels are a great opportunity for the floods to be attenuated before the Kilombero enters a much narrower bed at shughuli falls.

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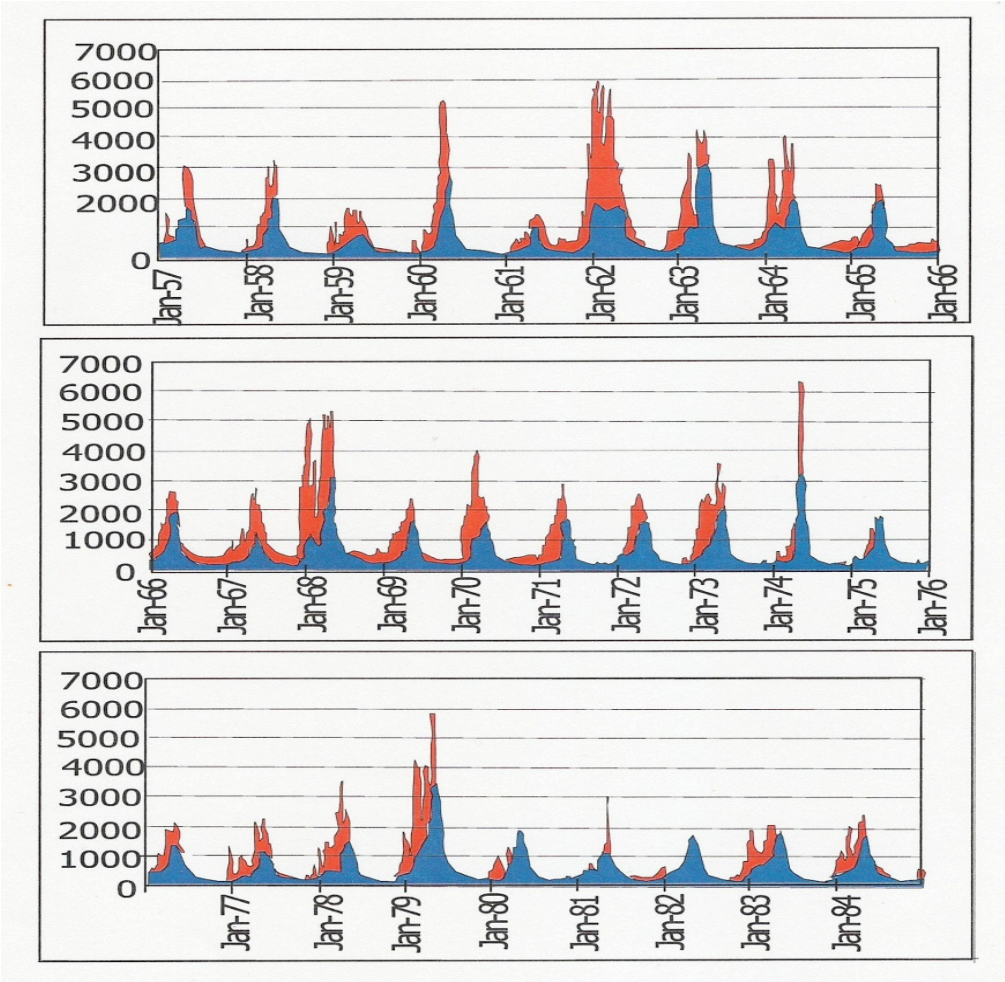
11 The Maji Maji uprising was a rebellious war between the colonial administration and the natives of Southern Tanzania. The colonial administration tried to force the Natives to grow cotton on their lands but the Natives did not like the system because their traditional system of farming was threatened. The word Maji Maji came from the water and millet flour the traditional witch-crafts used to prevent bullets from the colonial administration against the Native army. During this uprising more than 75'000 people died in Southern Tanzania (Temu 1980: 119).

Figure 3: Floods Patterns in Rufiji floodplain



Source: (Hamerlynck and Duvail 2003)

The graph above illustrates the hydrograph of the Rufiji River between 1957 and 1985 (flow in cumecs). The contribution of the Kilombero tributaries are shown in blue, characterised by regular fluxes with late flood (April) peaks (1000 – 3000). The contribution of the Luwegu tributary is shown in red, characterised by irregular early (January – February) flood peaks (2000-4000 cumecs).

The negative effects of floods should not be exaggerated, as they are generally beneficial and adapted cultivation systems of the river valley. It is said the floods, which occurred before 1962 were not destructive to the crops, as compared to after periods. This change might be linked to the colonial government's drive for land conservation. Such measures tend to enhance the water retention capacity and the reduction of run-off water.

The climate of the Lower Rufiji river catchment is tropical climate with narrow variation in monthly temperatures. Like most parts of south eastern Tanzania, the rainfall pattern of Lower Rufiji catchments area is controlled by the Inter-Tropical Convergence Zone (ITCZ) and the monsoon winds from the Indian Ocean. According to Panayotou (1990) the rainfall in Tanzania is characterised by two main regimes: the unbimodal regime characterised by a continuous rainfall from October to April/May, bimodal regime characterised by a short rain season from October to December and a long rain season from March to May.

The Lower Rufiji catchments and most parts of the eastern coast of Tanzania, south of Dar es Salaam are located in region VII (Ogallo, 1980 cited in Nyenzi et al., 1999), which experience unimodal rainfall pattern. It can therefore be concluded that the rainfall pattern of Lower Rufiji catchments conforms to the unimodal regime (e.g. Sørensen, 1998 in Turpie, 2000).

Flooding in Rufiji district is mainly connected to the level of rainfall and runoff conditions in areas other than Rufiji. It is clear that the floods in Rufiji usually occur in the period between the month of January and May of the year as the long rains season. The recent change of floods has been experienced in the area since 2002 and these changes are connected to global warming leading to climatic change. This change of major climatic factors, which have historically shaped the agriculture system and CPR use in the Lower Rufiji catchments, has today negative impacts on the livelihood strategies of the Rufiji people. Thus, because of the fact that the rainfall is generally not abundant, the agriculture in the area does not totally depend on rainfall, but rather depends on both rainfall and flooding.

Rainfall and flooding are the two dominant environmental factors in Lower Rufiji basin, which control agriculture and the livelihood of Rufiji people. In good years, they both complement each other so as to create favourable conditions (especially for rice cultivation). In bad years, their interaction may result in either drought or disastrous flooding. According to Bantje (1979), the quantity, timing and duration of both rainfall and flooding determine good or poor harvest, and these conditions vary from year to year. A failure of short rains may cause food shortage unless rainfall and flooding in the flooding season are favourable. Thus, if the failure of short rains is followed by no floods (i.e. prolonged draught), poor harvest of both maize and rice will result, leading to serious famine. However, if the failure of short rains is followed by adequate floods, good mlau harvest would result with poor maize harvest, leading to less serious famine. The other scenario of a good short rain season followed by poor flood season would lead to a more serious famine than the scenario of poor short rain season followed by good flood season. The floods compensate for the shortage of rainfall

during the dry season. The floods help to regenerate the soil fertility through the spread of nutritious silt carried by the floods water. It improves the conditions of cultivation during the dry season, when cotton and maize can be planted on inundated areas.

Unlike most parts of Tanzania, which have either one or two agricultural season, Rufiji District is peculiar in that its agriculture year is characterised by three seasons (Bantje, 1979; Hamerlynck and Duvail, in prep.). The short rain season (Vuli), which involves planting of maize in November/December and harvest in February/March. The flood season or long rains season (Masika), which involves planting of rice in December/January and harvest in June/July and as well as the flood recession season (Mlau), which involves planting of maize and pulses in May/June and harvest in August/September (maize) and October/November. Flooding in the Lower Rufiji is very much depending on the precipitation from the Upper Rufiji, which receives much higher precipitation.

The floodplain has its fertility regenerated yearly by the Rufiji River flood (e.g. Cook, 1974; Bantje, 1979, 1980, 1982; Kajia, 2000; Ochieng, 2002). The floods play a role in various activities in the lower Rufiji floodplain. It improves the conditions of pasture, hunting as well as fishing in the floodplain. The most important areas for fishing are inundated areas. During the flooding season, temporary lakes are formed all over the floodplain by floods and the local people have extensive source of fisheries, which many of the households depend as a livelihood. The floods, brings nutrients to the fish in the valley, the delta and coastal waters as well replenishing the water bodies in the floodplain with fish. The floods have significant impacts on transportation system in the district. Road transport becomes impossible and the district is de-linked from the main market regions in the country (Havnevik 1993).

3 Ethnography and Social Organisation

Ethnographic and historic accounts of the Rufiji people are limited; with a few exceptions, the available data centres on the Rufiji ecological and economic system. The ethnographer A.H.J. Prins noted in 1967 that the “Watu-wa-Rufiji” as a distinct local group living in the southern part of the country (7° latitude South). That same year Beidelman published his ethnographic survey entitled The Matrilineal Peoples of Eastern Tanzania in, which he writes about a “the matrilineal belt of Eastern Tanzania” to which one could also add the Rufiji people. However, the boundaries between these various matrilineal peoples, and between them and their patrilineal neighbours, are far from clear. The political situation of the nineteenth century is much shaped by the slave raiding and trades, which led to unstable settlements.

Nevertheless, the (WA) Rufiji people reside within the geographic area addressed in Beidelman's survey, sharing many cultural, linguistic, and agricultural practices with the groups belonging to this "matrilineal belt". The lumping together of these groups in the ethnographic material continues to the present. Matthew Lockwood's 1998 study of the demography in Rufiji area asserts that there was constant migration to and from the Rufiji District. Matthew Lockwood on the other hand describes the ethnic identity in the Rufiji District being linked to patrilineal descent groups, or Ukoo (kinship) group identities such as Ndengereko or Matumbi, or the broader regional identity of "Rufiji". Although the available ethnographic material suggests that Rufiji people are matrilineal but the Rufiji maintains that descent is traced on a patrilineal basis (Lockwood 1998: 59)[12]. This diversity is reflected in linguistic terms. A part from Kiswahili, Rufiji residents speak three mutually intelligible Bantu languages throughout the district: Kindengereko, Kirufiji, and Kimatumbi.

The closeness of the languages, culture and political structures of these groups has made the local residents and outsiders refer simply these groups collectively as the Rufiji people but in the real fact, these are different ethnic groups with diversified social-political backgrounds. The importance of ethnic identity in pre-independence time lie in how migrants to the Rufiji Basin employed identity in order to gain land rights and access to CPRs such as water, fishing, wildlife and grazing areas. People from the same Ukoo had the same rights to all resources within their Ukoo and through marriages; the migrants were allowed access to land and the support of lineage group during natural calamities. In Rufiji river basin, each Ukoo (clan) group was associated with particular pieces of land over which it had corporate rights[13]. Membership in an Ukoo group accorded individuals the usufruct rights over the designated plots of land. In addition, membership played an important role in the co-ordination of bride wealth payments and rituals. In Rufiji, instead of vesting land in the "dominant matrilineal" land was held in trust for the groups by a dominant patrilineal Ukoo group for instance among the Ndengereko. The centrality of the Ukoo system to Rufiji political and social relations led Lockwood to define it as "a principle of authority which cuts across the official structures". The kinship networks formed the unifying social structure in the Rufiji basin. Kinship webs stretched from one ecological zone to another. Marriage connected river terraces residents to

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[12] It is difficult to evaluate this shift from matrilineal to patrilineal system. Due to increased Islamization of thearea in the 19th century may account for this change.

[13] Ukoo (clan) are sub-groups within a large ethnic group, more localised access to specific CPR. The large group is referred in this paper ethno professional group mainly in the fisheries, wildlife and pasture chapters.

floodplains residents, allowing both a sense of security in times of high flooding or drought. This geographic differentiated settlement pattern was evident in the late 19th century. William Beardall, writing for the Royal Geographic Society in 1881, described settlement along the Rufiji River. He reports:

"The Rufiji villages are all very much alike. Generally a clump of mango trees, and a few bananas, and sometimes one or two coco-palms, in the midst of which is a number of small-scattered huts, thatched with leaves from palmetto tree, the sides of the huts being merely grass screens. The natives all call themselves the Rufiji people, but they are divided into a number of small hamlets and each little village has its own chief, who appears to be perfectly independent, and they have very little cohesion or centralisation. The chief has very little authority even amongst the people of his own village (Beardall 1881: 646)."

The men described by Beardall as "chiefs" were most likely the Mpindo (plural: wapindo), or Ukoo elders. The traditional clan ruler maintained order and peace within his clan and extended the same to the neighbouring clan and made sure all conflicts a rising were managed in a careful manner to curb further escalation. The clan warriors under the leadership of the village headman were to defend the clan and they were not supposed to attack any clan without the orders of the headman[14].

The major religion of the Rufiji people was based on animistic believes for they saw that spirits in the environment and as well ancestral sprits influenced daily live and access to resources (see fisheries chapter). Ritual specialists performed sacrifices and rituals in order to enter reciprocal relationship with these supernatural beings. On the other hand, Islam got more and more hold of Rufiji area during the time of slave trade. Islamic religion was accepted in Rufiji as a strategy of local people against being captured by Islamic slave raiders for they would not enslave Moslem brothers. Still their animistic believes remained.

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[14] In the pre-colonial time each ethnic group in the floodplain had a ruler who was responsible for the management of the resources in his territory. The ruler (Mpindo) and his council of elders composed of aged men who were to plan for the clan and all sorts of conflicts within their territory were solved by the ruler (elder) and his council. The household members were loyal to this ruler and nobody was to act against his decisions. The Elders had power to punish any culprit in his territory and all cases were reported to him. The elder (ruler) was to make sure all the subjects in his territory had enough land and used to incorporate the weak in Kindigu farming for food security reasons.

3.1 Ethnic Composition as ethno-professional groups in pre-colonial times

In the pre-colonial time, the local people were organised in societies, which were under the leadership of the traditional Mpindo ruler, who was assisted with a council of Ukoo elders. The management and distribution of CPRs like fish, bush meat, pasture and water was organised through this structure. This council of elders was to keep peace and order in the lineage or clan. The traditional ruler and the council of elders administered the local courts but the traditional ruler made the final decisions once the council of elders was satisfied with the evidence given. The territorial boundaries were observed at all times and resources within the lineage or clan were open to the lineage members in all seasons but reciprocity was applied in time of need.

The colonial government changed the functions of the traditional ruler through the introduction of indirect rule. However, the colonial government retained the traditional rulers the management of the common pool resources was done through the application of the government policies, which restricted the locals from free entry to the resource sites without permission from the government official. The survey data show that at least six major different ethnic groups represented in the floodplain population: The Ndengereko (40%), the Matumbi (20%), Makonde (16%), Ngindo (12%), Pogoro (6%), Nyanza (2%), and the remaining significant minorities being the Zaramo, Hehe and Ngoni (2%).

These ethnic groups had different economic activities based on their social-economic background in the pre-independence time. However, the groups inhabited the same floodplain ecosystem but their traditional culture and beliefs governed the access, sanctioning, monitoring, and regulation of the CPRs.

The **Ndengereko** people who are known as Waruhigo used to practise mixed farming in the floodplain since the pre-independence time. They are considered as rice cultivators and their culture is connected to farming activities. The rice cultivation has locally a connection to the practice of witchcraft in the floodplain. The practise of witchcraft has to do with jealousy in rice production among the Ndengereko as well as to other ethnic groups, which have joined in farming in the recent years as the crop has gained the market value as a cash crop. The breakdown of the cotton and cashew nuts markets in this region, left rice as the main crop for cash generating as well as for food in household consumption. The cultivation of the crop is linked to the social-cultural believes of the native groups in the area. The practice of witchcraft has scared many of the new peasants, who have reduced their acres of rice production from 2 to 0.5 acres. Nevertheless, the Ndengereko (original) the native group can

cultivate up to 3 acres depending on the availability of the household work force. The abandoned farms have turned into hiding places for wild animals, especially wild pigs, which are a big problem for the peasants in the floodplain. The oral information contradicts the claim of the Ndengereko as the indigenous people in Rufiji floodplain. However, the Ndengereko are the largest ethnic group in the Rufiji District they have migrated from the north of Tanzania to the floodplain like other groups in search of fertile land for cultivation.

The **Matumbi** people used to live in mountain areas for protection reasons. They feared to be attacked from neighbouring groups such as the Ngoni. For safety reasons, the high mountains gave them an opportunity to monitor their enemies from all angles. Their livelihood depended on forest products and cultivated millet in the valleys. Today, the Matumbi are involved in farming, fishing, logging, and hunting activities.

The **Makonde** people identified themselves as fishermen and used to live near the waters claiming to be in touch with the ancestral spirits, which protected them while fishing in Rufiji River and the floodplain lakes. The early migrants followed the river and decided to settle in the Rufiji district because the common pool resources, such as fisheries, were plenty at that time. The culture of the Makonde people restricted them from eating some species of fish, which were considered to cause illness once eaten. The traditions of the Makonde economic activities have changed in recent years and now their livelihood strategies have been diversified due to the social-economic changes at the local level. Today, the Makonde are involved in farming, fishing and logging activities.

Before coming to the Rufiji floodplain, the **Ngindo** people's economic activities were bee-keeping and hunting. Their livelihood was honey collection; however, they had access to forest products. The Ngindo people were famous in bee keeping and are still recognised as beekeepers today despite the diversification of their livelihood strategies in the post-independence period. They have opened new farms in the floodplain and many of the young men are involved in fishing today.

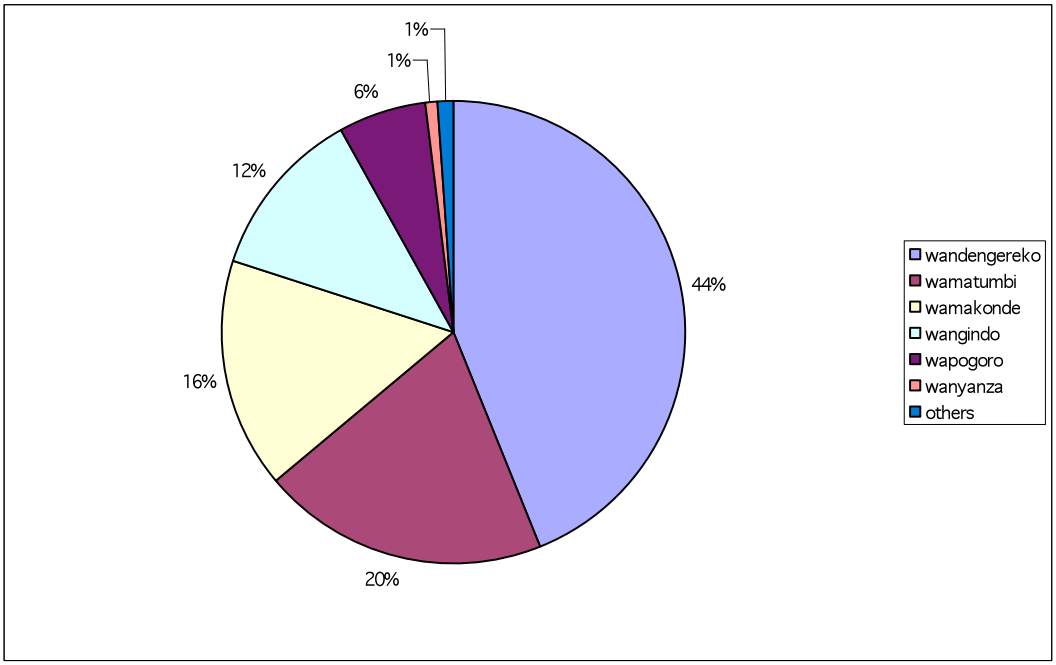
The **Pogoro** people used to live close to the rivers and lakes. Their main economic activities were farming and fishing. The Pogoro people, like other ethnic groups in the floodplain, are today involved in farming, fishing, logging and small-scale business.

The Nyanza (**Malawi**) people: Their economic activity was purely fishing in Rufiji River and the floodplain lakes. They introduced net fishing techniques in Rufiji floodplain lakes, which later spread to other parts of Tanzania in the post-independence period. The Nyanza people

are still making fishing nets, fish and grow food crops in the floodplain, which is new to this group of people.

All these groups had CPRs areas changing according to change in seasons, governed by lineage leaders (Mpindo) and lineage membership was applied to allow access to CPRs, especially in dry season, when the resource stocks were considered to be limited to accommodate the needs of the external groups.

Figure 4: The ethnic composition in Rufiji floodplain survey sample (N=150)



Source: Patrick Meroka 2003

The ethnic heterogeneity in Rufiji floodplain reflects a history of immigration, dating back to the 19th century, when the wars (ca.1840) caused displacements of people from the southern parts of the country, and the central caravan route passed through the area (Kjekhus 1977). In the early part of this century, major population shifts affecting the area were the northward movement of the Pogoro from the Ulanga district. It is said the movement took place due to the disturbances of the Maji-Maji rebellion and subsequent German reprisals (1905 to 1907). The Ngindo people are said to have moved from the southern province (Lindi and Liwale districts) following the famine and sleeping sickness outbreaks of the 1920s in that region. Several of the respondents spoke of their personal experience of these historical events.

3.2 Political organisation

In the pre-independence time, the Rufiji people were politically organised on a lineage or clan basis. Each lineage had a political leader assisted by a council of elders in administration,

CPRs management and conflict resolution within the lineage territorial boundaries. The traditional political system was organised in hierarchical way and the leadership was monopolised by specific households, which were locally recognised and power in this case was inherited in a traditional system. The political set up of the Rufiji people indicate that the villagers elected the lineage leader (Mpindo) and he appointed a council of elders, who were locally respected and knowledgeable on social-political issues. The lineage leader's political ambitions remained stable as long as his control over different households recognised his administration and paid tributes to him. This leader was supposed to maintain peace and justice among his subjects and neighbourhood.

In the pre-independence times the (Mpindo) traditional ruler was only respected, if his granaries were full of grains to feed his people during the hunger period. Food economy increased the bargaining power of the (Mpindo) and made him politically popular at the local level. In the pre-independence time, the traditional ruler controlled his subjects' activities and organised them against attacks from their enemies. All villagers supported the locally formed political institutions and the (Mpindo) was to punish the defaulters. These institutions were embedded in traditional culture and customs of the Rufiji people. For example, in the pre-independence times the management of CPRs, such as fishing activities, were done collectively under the supervision of the clan council of elders who were responsible for the management of the resource. The monitoring, regulation and sanctioning was done at the lowest costs because the villagers had direct benefits from the resource and the fear of the spirits protected the resource. This council of elders were transparent and used to punish the wrongdoers in public. Every villager had the responsibility of reporting the thieves to the council of elders who had bargaining powers to sermon the culprits to traditional courts, which were locally formed. The locally developed laws were applied and if one were proven guilty, he or she paid a fine and the sitting allowances to the council of elders.

The traditional ruler allowed his subjects to set up shrines in the forest and close to waters for worshipping. The Mpindo used to co-operate with neighbouring villages in time of need but the regulations of entry were followed as stipulated in traditional by-laws. The headman controlled the local courts (Baraza) and informal by-laws were applied in solving cases. In case of conflict over a farm, traditional boundary or over a child, the council of elders, under the directives of the (Mpindo), must establish the facts of the case and provide solutions. This took several days to decide and later the two parties were reconciled. Both sides accepted the final judgement because the witnesses came from the local village and before giving their evidence, they were to undergo traditional rituals, which were performed by a traditional

ritual specialist. People used to be careful on the evidences, as false information was believed to anger the spirits, which were to punish the defaulters in different ways. Most of the lineage leaders were said to be witches, that is why the villagers were afraid of them and that made their leadership easier as the villagers remained obedient in tributes paying to the lineage leaders.

3.3 Religion and Natural Resources

The Rufiji people are said to be 75 % Moslems and accepted Islamic religion because of economic reasons. The local example is Segeni irrigation scheme situated in Mbunju/Mvuleni village, which the government of Iran financed and gave free donation of goats to the residents as a sign of solidarity to the Moslem community. It is amazing to see the Muslims in the village continue giving offers to the earthly spirits as well as being followers of the Islamic religion. The Muslim leaders in the village defended traditional religion and said to give offers to the earthly spirits is not a crime as some can think but the most important is one's conducts and personal belief. The Islamic religion is said to go hand in hand with traditional religion and that is why traditional religion is part of the Islamic religion. The Arab traders introduced the Islamic religion to the area before colonial time. The lineage leaders accepted Islamic religion to protect their patronage. The communities in Rufiji district including the floodplain villages accepted Islamic religion to avoid harassment from slave and ivory traders. It was against Islamic religion to capture a fellow Islamic brother or sister and sell to the Arabs merchants. However, Islamic religion spread quickly in the coast region however the local communities continued practising traditional religion indirectly. The social-economic and political set up in the region was linked to traditional religion and it became difficult for Rufiji people to abandon their traditional religion, which the forefathers had practised for centuries.

The Rufiji floodplain is that considered as being Islamic but animistic religion carry more weight than Islamic religion because the Rufiji people used to worship spirits before the Arabs introduced Islam in the area. However, the Rufiji people were converted to Islamic religion, the local beliefs in spirits continued as it was before the spread of Islamic religion in the area. In theory the Rufiji people were Moslems but it was hard for them to abandon their religion, which protected their livelihood strategies. The animistic religion, which the Rufiji people believed in, protected the CPRs and the implementation was done by traditional institutions, which were responsible for regulation, sanctioning and monitoring at the local level.

The traditional religion of Rufiji people recognised the importance of super natural spirits of reproduction (Vijimungu Vya Uzalisaji). The Rufiji people used to offer sacrifices before exploiting the CPRs as well as planting and harvesting of the agricultural products. It was considered disrespectful to the ancestral spirits, if the villagers started to eat maize at the beginning of the season before rituals were performed in honour of the spirits of production. It is said misfortunes and diseases are likely to occur, if the villagers use resource before giving thanks to the controller and owner (spirits). The elderly people in the floodplain are well informed of the functions of the spirits and the consequences, which the community can face once the villagers fail to give annual offers to the spirits. It is said the spirits of production, has power to keep the resources from the users, if collective offers are not coming from the users, and protects the livelihood strategies in the village. In the old traditional institutions the local villagers used to give a collective offer in every two years but there was a possibility to take place more often, if accidents occurred in the water bodies or forests. The violation of the laid regulations to various resources is believed to have been the cause of misfortunes to the local people and external resource users.

The response of the spirits was seen through more rain, good harvest, fewer accidents in the lakes and less attacks from the wild animals. Traditional religion is still practised in the Rufiji floodplain; however, the local young people and external resource users claim traditional religion is against development and a barrier to modernisation. But it was to be recognised that the management of CPR was linked to animistic believes, which regulated and monitored the behaviours of the appropriators. Major importance ritual had specialist who used to communicate to the spirits on behalf of the villagers on special occasions. The spirits demands were honoured through rituals and gifts giving. The rituals, which were made in honour of the spirits of reproduction or the ancestral spirits, were also incorporated in the ritual prayers. The gods of reproduction acted as the main agents of the ancestral spirits, which have their dwelling place in nature like the gods of reproduction.

The responsibility and duties of the ancestral spirits to the society were demonstrated through the activities of the spirits of reproduction and production. The link between the ancestral spirits and the gods (spirits) of production is that: the ancestral spirits command the moral upright of the community members and the spirits of reproduction responds either positively or natively to the behaviours of the society members according to the demands of the ancestral spirits. The ancestral spirits sets the rules and the gods (spirits) of reproduction implements them. The rituals can be directed to the gods of reproduction but the ancestral spirits have a share too in the same ritual.

However, Rufiji is considered to be Islamic region, traditional religion is widely spread. The social set up of the communities in this region is firmly linked to traditional religion. The Rufiji people give offers to the earthly spirits first because these spirits are known to be jealous and can cause problems to the locals, once the offers are not given. However, the heavenly spirits are remembered in the ritual's prayer, the earthly spirits plays a great role in protection, production and reproduction. The Rufiji people give gifts to earthly spirits but give prayers to the heavenly God. They argue that since the earthly spirits are aggressive and destructive much care is taken to avoid natural calamities. The villagers perform protection rituals at the entry to the village land and at the end of the village land to protect all the villagers from the attacks of the wild animals and bites of the snakes. Traditional religion protected the use of CPRs and their sustainability was guaranteed through the norms and taboos, which were attached to the resources, embedded in the local customary by-laws.

Traditional religion in Rufiji floodplain is still recognised by the villagers as the protector of all natural resources as well as the Rufiji people. In the pre-independence time the council of elders used to manage the CPRs through the application of the customary by-laws and used to get support from the young people, who had respect and used to listen to the elderly people. The dislocation of families from their ancestral land lead to the breakdown of the social set up and many households' members were separated and the parent's powers over their children were reduced. The mixing of people with different social backgrounds eroded the credibility of the traditional religion in Rufiji. Formally each ethnic group had special ways of giving offers, which changed after the dislocation process in the 1974 (operation Rufiji). Before villagisation traditional religion united the villagers and was co-managers and the defaulters were openly punished. The powers of the spirits scared many people and made the management of the resources easier. Access to the resources was only through the council of elders, who had responsibility to monitor, regulate and sanction.

Today the management of the CPRs is quite difficult because the council of elders have no bargaining powers any more as they used in the pre-independence time. The village government is composed of young people with high ambitions in development and acquisition of electronic devices, which are considered locally as a symbol of prestige and power. These leaders are blamed for the problems facing the village today because many of them are involved in corruption as well as illegal resource exploitation. The opening of the area to the outside world has rendered the traditional religion powerless and now facing competition from other religion such as Christianity, which denounce the role of spirits and encourages the use of natural resources. The informal education and resource taboos gradually changed in the

recent days and today the village council has problems to manage the resources as informal institutions have been dismantled.

The interest of various stakeholders have increased pressure of the CPRs as young people have been transformed through external contacts, formal education and religion sects and all these are against traditional conservation. The young people are not afraid of the spirits as they used before the foreign influences took root in the region. The dislocation of the hamlets from the floodplain and formation of the Ujamaa villages in the 1970s was the start of problems related to CPRs management in the region. The ethno professional groups had hard time to copy the life styles or the eating behaviours of the other groups, totems as well as the taboos, which were attached to the CPRs in respective lineage before the consolidation of the hamlets took place in the 1970s.

The dislocation of the hamlets made it difficult for the ethno professional groups to continue giving offers and gifts to their ancestral spirits. Since the spirits have specific dwelling places and not like human beings, who can change places as they wish made it hard for the floodplain people to contact them in time of need. The spirits remained in the floodplain and that is why in many occasions the villagers have to move down to the floodplain forest or close to Rufiji River to offer sacrifices. It is believed the spirits can respond to the request of the villagers, if the offers are done on the floodplain but not the highlands. The shortage of resources and high demand of the manufactured goods has contributed to overexploitation of the common pool resources in Rufiji Floodplain. The mixture of traditions and religions in the area today has failed to protect the CPRs and many of the villagers have brushed aside their beliefs and have turned to be competitors for the market.

It was believed that, if an individual goes against the stipulated norms of the village the entire village was to be punished. That is why entire lineage was to participate in observing the conducts among themselves and the culprits were reported to the council of elders for sanctioning. The natural calamities in the floodplain were connected to individual or communal behaviours and cleansing was necessary to protect the livelihood strategies from the spirits' anger. The ritual specialist was to immediate and the response came through actions as already mentioned above. The concrete example is illustrated here below how the community used to contact their ancestral spirits in time of difficulties especially in the dry season.

3.4 Tambiko (Ritual) and Resources use

In this chapter the role of ritual offers and resource use will be illustrated through local signs, which were to warn the local residents of the punishment to follow, if the community was not to act swiftly to control the situation. The locals said animals are typical signs through, which the super natural spirits communicate to the community members in time of need. The Rufiji people narrated how the super natural spirits used to send a lion to warn the community of their behaviour after the rains had failed in the region. The lion was to come out of the forest to sound warnings to the villagers at night and the village spokes man was to respond immediately after the roaring was over that same night. The village spokes man was to come out and talk loudly "I have heard your demands and soon everything will be fine) the lion was to answer "man". In the next day, the village leader was to arrange a meeting where all elderly villagers were to meet and the demands from the lion were discussed and given an urgent hearing. The roaring of the Lion came as a sign of rescue for the affected village, which had lacked rain for farming activities. It was possible surrounding villages received rain while the neighbouring village was naturally excluded. The ritual ceremony was compulsory for all adult people from the affected village to attend and each household was contributing some food or money for the ceremony. The ritual ceremony was prepared by a recognised rainmaker who was believed to have contacts with super natural spirits, which were held responsible for the drought in that particular village. The rainmaker had to slaughter a black hen on the presence of the villagers and nobody was allowed to talk unless the ritual specialist asked them to talk. The offering of the black hen symbolised the spirits from the gods of reproduction, which were believed haunting the village.

The ritual ceremony was accompanied with signing and drumming as well as traditional food and Beer, which were prepared by a particular woman who the super natural spirits appointed. The villagers through the collective ritual ceremony fulfilled the demands of the super natural spirits, which the roaring lion passed to them. The community believe that the roaring lion is not a wild animal but a human being who turns to be a lion (*Libeyage Mbotoni*) the old men who existed in the past but exiting in form of wild animals. The roaring lion had power to command the wild pigs to destroy agricultural products in the floodplain until the community responded with an offer.

It was said the pigs were to disappear immediately from the farms after the ritual offer has been done. Today such rituals have been abandoned and the current drought in Rufiji floodplain is connected to the super natural spirits, which are angry with the villager's

behaviour, however, the environmentalist argue that the changes taking place are related to global warming but the local people have different view. The traditionalist denounces the statements of modern science and can recall the severe droughts, some decades ago, which were followed by heavy rains after the community contacted the ancestral spirits through rituals. It was said the modern science is inferior to traditional environmental knowledge as the locals narrated a special case where, the rainmaker performed his rituals and before the audience reached their homes, it started raining making floods. On this material day there was no sign of rain but the clouds condensed quickly and through the prayers of the rainmaker and the lineage people who participated in the ritual benefited from rain water as the neighbouring villages remained without rain.

The problems facing the CPRs in Rufiji floodplain are said to be related to the decline of rainfall, which has threatened the main livelihood strategies of the Rufiji people today. It was said the following of the modern ways of behaviour has irritated the super natural spirits, which have resorted to punish the local residents through holding back of the natural resources as a sign of disobedience to the masters and owners of nature. The current problems facing the area are related to traditional beliefs, which the local residents have abandoned claimed the leader of the council of elders. The failure of agricultural activities, which is the main economic activity in this area, has affected the sustainability of natural resources such as fisheries and wildlife. The decline of fish stocks in the 13 permanent floodplain lakes is considered to have links with the declining of agricultural production in the region and the people are looking for coping strategies elsewhere. It was said the local people are today depending on the fisheries well as forest products to generate income to get food from the market as the individual household agricultural production in the recent years has recorded low yields and in some areas crops fail to reach maturity; this has thrown many of the households in staple food insecurity. The continued droughts have discouraged the locals in farming and this has affected the traditional lifestyle of the Rufiji people who depended on traditional agriculture as the source of staple food. The decline of food in the village has contributed to social conflicts in the lineages and has forced many of the household men to abandon their families to join casual labour force in the urban centres. The remittance of cash from the family members from outside the district enables the left behind family members to buy food and the basic necessities. It was said lack of food has led to broken families as the single parents turn to various alternatives to feed their children. The problems facing the Rufiji people and the economic activities well as environmental degradation are linked to disobedience of traditional religion and disrespect of community.

The traditional religion, which was the custodian of the morals in the floodplain societies as well as the shield to all social and economic activities in these societies, has been transformed and ignored by the young generation at the expense of the community in the recent times. In the pre-independence time traditional religion had firm foundation in the rural areas and the local elders were recognised as the implementers of the customary laws, which supported traditional religion.

However, the global climatic change has influenced the changes in rain patterns in the region the villagers believe that super natural spirits have abandoned them because of their bad behaviour and lack of respect to the spirit of production and reproduction. It is difficult to change the hearts of the old people to believe the modern scenarios of environmental changes such as global climatic change contributing to failure in rainfall and prolonged droughts can be the major cause of food insecurity.

3.5 CPR-Institutions/Tenure Systems/Customary laws

Traditionally the Rufiji people as hunters, fishers, and beekeepers as well as agriculturalist had well-developed traditional institutions, which administered the management of the resources within the lineage and clan territories. Through their own institutional arrangement and by-laws, the Rufiji people had continued to utilise their ecosystem in a sustainable manner up to pre-Ujamaa times. In the pre-Ujamaa times individuals and local communities established their own protected areas that were managed through local rules and regulations without interference from outside. The Rufiji people acquired land through four processes namely: clearing land in uncultivated areas of virgin forest; reallocation of a relinquished land holding; inheritance and allocation by the land control authority. Through inheritance, many people managed to acquire land, and no one was denied the use right of the land. In the absence of the elders, the elder son was given the custodian role to prevent the fragmentation of the original holding. Such land inheritance procedures were practised to protect the strong social solidarity that held the family together. The Rufiji people considered all land in their territory to have belong to their chief (Mpindo) who acted as a custodian and the subjects possessed rights in land use and enjoyed considerable security of tenure. Before villagisation in 1970s, distribution of land to family members was based on the traditional land tenure system. Such customs played a substantial role in the management of common pool resources both at the family and community levels. Land allocation to family members was largely determined by family size and land availability. Though every household had the right to hold land for cultivation and habitation, neither the chief neither (Mpindo) nor the subjects had the

right to sell land inside the clan or lineage territory. Members who felt unsatisfied with the land allocated to them migrated to other areas, leaving the land under the custodian of the Mpindo, which was to be later given to households with less land and willing to expand their agricultural production. Such arrangements ensured availability of productive land to those families who remained inside the clan territory.

Although the New Land Act (1999) put the role of allocating land to the Village Council, traditional land ownership and distribution systems still prevail in many villages in the floodplain today. However, the Rufiji people are now officially staying in the Ujamaa villages the farming activities take place in lower River Rufiji areas, which the Warufiji people had settled before their dislocation in the 1970s.

In pre-colonial times collective fishing among the ethno fishery groups was done in lakes only after the ritual offer (Tambiko) was performed by a specialist for the whole area of an ethnic fishing group under the traditional lineage leader. The ritual was done for the security of the fishermen against the attacks of the crocodiles, hippos and snakes, which were believed to have been, send by spirits, especially the supreme spirit called Subiani, who was seen as the owner of the lakes and controller of the fisheries. Not making the ritual lead in the eyes of the people to the killing of the fishermen in lakes by crocodiles and hippos. The ritual offered made the crocodiles, hippos and snakes harmless and Subiani, the controller of the lake, was then so kind to release the fish from the hiding holes in the deep water. This collective ritual offer was done twice a year and that gave the fisheries a chance to replenish naturally. For conservation there was a special technique called Misakasaka (more details see fisheries chapter). Nets could not be used in these areas so fish could not be caught there. On the other hand fish could not move out. The method was designed to have breeding and growing areas for fish, which were protected.

Hunting was done in the same way as fishing but the hunters were to consult the specialist who was to inspect the weapons and bless them. Before the hunting was done the hunters were to state clearly the animal and the place intended for hunting. The specialist was to give them directions and instructions how the hunting was to be carried out. The hunters were to bring back meat to the specialist to show what they had hunted and cheating was not an issue. If they were hunting something else the fear was there that they could be killed by animal spirits. People of the hunting groups thought that the animal spirit was assisting them by bringing the animal closer to the hunter, if the ritual procedure was followed. Also hunting required respect and ritual treatment by specialist, if not being too dangerous and not

successful. Hunting was done by middle-aged men who were locally known and had good reputation mainly on resource use.

The changing seasons in the floodplain were reflected in the seasonal changes in common property rules. During the dry season collective arrangements in the lakes as described were followed while access to the resource was open access during the flooding season as for example fish was so much spread all over the area. Therefore fisheries were open access, but this changed again as the floods started receding in the month of July. Hunting-rules were applied throughout the year but adapted to the flooding season.

These rules helped to co-ordinate local people and the different ethno-professional groups to do their activities and therefore everybody knew when and how to use the resources. Sanctions for misuse were embedded in the religion of the different groups. Between the groups the fact to be a member of fishing or hunting or agricultural group already regulated much of the use of these resources.

Of major importance in the pre-independence time were conflict resolutions in the Rufiji floodplain. There was a set up of specific mechanisms such as forums for disputing conflicts through elders, traditional leaders, and healing and reconciliation rituals. The traditional methods were not a one-day event, like the signing of a peace accord after battle. They took place in series, building on and affirming peace symbols with rituals related to the community's experience and memories handed over from the past generations.

Formerly, local leaders were responsible in conflict resolution and young people were not allowed to sit in the counselling meetings because they were considered to be troublemakers and can easily link the secrets out jeopardising the peace process. The traditional lineage leader summoned his council of elders and was to consult widely before any decision was reached. Traditionally, peace concepts and symbols were applied in conflicts resolution and any member going against them was bound to pay a fine or to be cursed by the elders. The community used to support the lineage leader and his council for peace keeping and unity within and without the lineage territorial boundaries.

Under traditional institutions, persons in conflicts appeared before the council of elders who patiently listened to each party and cross-examined them in order to establish the root causes of the conflict and the guilty party. After a time consuming scrutiny and the guilty party are found, the prescribed therapy must lead to harmony and peace. An animal is sacrificed and the blood sprinkled on the shrine of the god of truth and reconciler. A traditional expert in rituals

did this. These two parties were required to share raw meat and eat from the same dish and drink some traditional beer from the same calabash, a symbol of total reconciliation.

4 History of Rufiji floodplain

4.1 Pre-Colonial and Colonial Period

The German introduced formal government in Tanzania and forced the Tanzanian to abandon their traditional system of administration. The traditional lineage leaders were replaced with the government chiefs (Akidas). These (Majumbe) as they were known locally worked under the district commissioner (Liwali) who was the representative of the central government at the district Headquarters.

The introduction of the hut tax by the Germans in Rufiji became an economic burden for the Rufiji people. The first taxation ordinance was issued in 1897 and areas, which were under full political control were subjected to a hut tax whose main object was stated to be "educational" in that it was intended to oblige Africans to accept paid labour and accustom themselves to European administrative discipline.

Each household head was to pay a hut tax, which was collected by the government clerk under the supervision of the Village elder (Jumbe) on behalf of the district commissioner. The villagers were to pay this tax by force and many of the villager's human rights were violated in the process. The village (Jumbe) and his assistants were authoritative and in most cases canned those, who rejected or failed to pay their hut tax in time through the directives from the district administrator. The Rufiji people suffered a lot as most of the household missed the workforce for food production as adult men were forced to leave their rural homes to search for work in Colonial plantations or processing factories to earn money to pay for the hut tax. The taxes were compulsory in this region for all household men and those who had not paid in time risked being taken to court and imprisoned. It was said the Rufiji people through their traditional system of administration respected the law and many of the men were forced to leave their families and joined casual work in sisal plantations, which were the property of the colonial masters.

It was said that the labour exploitation of the Rufiji people by the Germans at that time contributed to under development of the region and also lead to food insecurity in most of the households. The food production declined because the available household workforce was invested in the labour market instead in food production. The colonial plantations in the region at that time enjoyed cheap labour, which the Rufiji men exchanged for little money.

The social fabric of the society changed rapidly as social roles changed to face the needs of the community. Since men were forced to work in other regions, women who remained behind were forced to assume additional work, which was traditionally considered as male roles.

It is said that the Rufiji people were reluctant to take wage labour in the German cotton plantations and cutting of mangroves at the delta and this forced the colonisers to bring labour from outside the region to undertake the jobs. The Rufiji people rejected to take these jobs because they resembled the earlier type of labour organisations on plantations using slave labour.

When Britain took over the administration of the territory after the First World War, they continued with the German system of administration in Rufiji. As in Britain, local authorities were in charge of all key public services like schools. The British tried to reorganise its district administration with an attempt at separating different entities of ethnic groups in the district.

One of the main aims of the British colonial administration was to make the Rufiji people to produce more food and also to participate in cash crops growing. The British colonial government had its objectives and priorities in Rufiji like its predecessors. The first objective of the government was to induce the Natives to produce more than what they required for home consumption.

The introduction of native Authority ordinance in 1926 gave the Native Authorities power to make orders on cultivation practices, taxes collection and land allocation (Fimbo 1977: 5). It should be kept in mind that these regulations, even though imposed by the Native Authority, had been initiated by the colonial administration. The colonial government used by-laws to obstruct peasants from growing cash crops which could have provided an alternative way of enabling tax payment without engaging in migrant labour (Nindi 1979: 22).

The British colonial administration replaced the lineage leaders “Wapindo” with “chiefs” who were responsible for all administration duties at the community level. The Native Authority was entrusted power by the colonial administration. The chief had power to collect tax from the households on behalf of the colonial government. The chief was to supervise and monitor the conservation of nature at the local level and defaulters were to be taken to Native Authority courts administered by the local chiefs. The chiefs were supposed to teach their subjects on soil preservation, agricultural production, forestry, de-stocking and they were responsible for land demarcation. The coming of the colonialists to Tanzania was not only a

political issue but much interest was on common property resource and this caused tensions at the local level contributing to resistance like the case of Maji Maji rebellion of 1905-1907, which took place in Rufiji.

In the pre-colonial and part of the colonial government the traditional institutions enjoyed their sovereignty despite the presence of the colonial government. The lineage leaders were of much influence at the local level in administration and that is why the colonial government continued working with them. The bargaining powers of the lineage elders were reduced and their leadership was declared illegal. The management of the common pool resources was transferred to the state institutions and the locals were to apply for licence in order to access the CPRs.

However, the traditional institutions continued to exist they were not officially recognised in the new state laws, which the colonial government introduced for the management of the CPRs as well as administration of the district. The introduction of the local government at the local levels all the administration functions, which the traditional institutions executed, were transferred and done by the newly established state institutions.

The British administration policies excluded the crucial functions of the traditional institutions on CPRs management in the region. The exclusion of these traditional institutions from the management of the CPRs within the territorial boundaries gave the government bargaining power to grab the lineage or clan land, which was declared crown land and part of it was converted to Game reserve. The Selous Game Reserve is the best example where the villages in the South-western floodplain in Rufiji district lost their land to Selous Game Reserve in 1945. The colonisers took much of the land from these villages under the protest that the area was invested with tsetse flies and was not suitable for human settlement. On the other hand the colonisers wanted the villagers denied entry into the reserve in fear of continued hunting and spread of diseases by domestic animals to the wild animals. The closing of this area and declaring it as a protected area and all the CPRs within the Game reserve as a state property reduced the livelihood strategies of the Rufiji people who had used resources from such areas for decades. The traditional institutions became powerless gradually and the lineage leader's patronage had no meaning any more. The traditional institutions conflicted with the state interest in the CPRs management and their existence was totally scrapped off in the post-independence time.

4.2 Independence and Ujamaa

The political and economic aspects in Tanzania were the main issues Nyerere was to address in the first years as president. When Nyerere took leadership in Tanzania, the country was suffering from a severe foreign debt burden, a decrease in foreign aid, and a fall in the price of commodities. From the beginning, Tanzania was a poor state, with few exportable minerals, little industry, and an agricultural system dominated by self-sufficiency.

To counteract a deteriorating economic situation, Nyerere made some major changes in 1967. His solution was the collectivisation of agriculture through villagization program. The objective of socialism in the United Republic of Tanzania is to build a society in which all members have equal rights and equal opportunities. In which all can live in peace with their neighbours without suffering or imposing injustice, being exploited, or exploiting; and in which all have a gradually increasing basic level of material welfare before any individual lives in luxury (Nyerere 1968: 340).

In Feb 1967, Nyerere issued the Arusha Declaration, a major policy statement that called for egalitarianism, socialism, and self-reliance. It promised a decentralised government and a program of rural development called Ujamaa ("pulling together") that involved the creation of co-operative farm villages and to extend traditional values and responsibilities around kinship to Tanzania as a whole. The program was designed to revitalise village agriculture by combining modern technology with African ideas of co-operation. The Arusha Declaration put agriculture at the centre of the national economy and introduced a programme of "villagisation" meaning the moving of peasant families into co-operative villages where they can supposedly work together in more productively system. The state gradually extended its control over all areas of business life. Banks and all private companies were nationalised and state corporations created to provide goods and services for the population.

In 1973, the villagisation policy was proclaimed to be more or less compulsory and millions of peasant families were moved to already newly villages or new sites, which were often unsuitable for productive farming.

The policy met significant political resistance (especially when people were forced into rural communes) and with little economic success. Nearly 10 million peasants were moved and many were effectively forced to give up their land. The idea of collective farming was less than attractive to many peasants. A large number found them worse off. Productivity went down (Swantz 1985; Havnevik 1993; Buchert 1994; Finnida 1995). However, the focus on

human development and self-reliance did bring some success in other areas notably in health, education and in political identity.

After independence and with the introduction of Ujamaa the political change in the country affected the common property resource management in Rufiji floodplain. The president of the Republic of Tanzania introduced Ujamaa as a means of development and unity in Tanzania. The implementation of Ujamaa policies weakened the traditional institutions in the following way: The traditional leadership was abolished and new village governments were introduced and all the scattered hamlets were consolidated to Ujamaa villages. Despite ethnic differences people were mixed together and local ethno-professional groups stopped to exist in the same way as before because the government declared all people being Tanzanians and the ethnical boundaries were being dismantled. The traditional governance and regulations were restructured and the state institutions took over the work, which the traditional institutions used to perform as the formal laws were introduced and implemented.

The powers of the lineage leaders were reduced and their positions in administration were abolished and taken by the new village government representatives at the village level. The tasks and duties of the lineage leaders were declared illegal and traditional courts (Baraza) at the local villages were no longer functional as the civil courts at the district level took over the former duties of the traditional courts. The new formal policies gave the President more power to control land and all the common pool resources in the country. The customary ownership of land was transferred to the office of the President, who became the trust and custodian of land in the whole country. The internal lineage territorial boundaries were dismantled and reorganised and demarcated according to the new government polices and all Tanzanians were allowed to move to any part of the country as they wished, irrespective of their locality. The dismantling of the traditional institutions paved way to open access in common pool resources in the Rufiji floodplain as well as in other parts of the country. The change of political regimes in Tanzania has affected the social-political structure of the Rufiji people. The new regimes have changed the informal customary laws and regulations (institutions) and replaced them with constitutional formal laws, which have denied the local residents of their rights of occupancy as stated in land act of 1974. Today the village government supports the new political structure and management of the common pool resources. But these village government representatives do not have the same powers as the traditional lineage leaders (Mpindo) had before. In addition, the administration of the village chairman is not effective because the consolidation of the different households into Ujamaa villages made the entire administration complicated and difficult. Formally the local leaders

controlled, regulated and managed all the resources on behalf of the lineage or clan members but today village chairmen protect the needs and interests of the state.

The new political system is dominated and supports the larger groups, which are loyal to the ruling party (CCM) while the opposition and many of the members from minority groups are sidelined in common pool resource management. The open support from the state has made the larger ethnic groups more powerful politically locally and all government functions are executed and controlled by these groups. The government posts are distributed to the government supporters and this has lead to conflicts in the village. The minority groups are now fighting for their rights but the village government officials continue to manage all government functions. The conflicts between the pro-government and opposition have contributed to failure in collective action in common pool resource management.

The newly formed state institutions are not capable of delivering services to the local communities and that has led to mistrust at the local level. So in spite of having all Tanzanians profit from the state, parts of the local communities could not participate in decision-making. The enforcement of the Ujamaa policies contributed to immigration processes, which continued greatly in the 1970s and reduced in (the 1980s). The change in demography of the Rufiji people is said to have taken place in the collectivisation and villagisation policies of the early 1970s (Ujamaa), which caused the peak rate of immigration to the floodplain. The heterogeneous composition of the Rufiji people is connected to immigration, which took place in colonial and post-independence governments. Part of the Rufiji people in the floodplain said that their families were not original inhabitants of this area but had moved in since their grandparent's generation, and the large number immigrated into the floodplain in the 1970s during Ujamaa period. Thus, it would appear that immigrants, many of whom have a relatively short history of living in the area, form the bulk of the ethnically heterogeneous Rufiji floodplain population.

The rate of immigration reduced gradually in response to the decline of agricultural production, mainly in cash crops, and the breakdown of factories such as cotton ginnery in the floodplain in the 1980s, when Tanzania economy was restructured. The introduction of Structural Adjustment Programmes in Tanzania led to the closing down of many factories and industries, which operated in Rufiji floodplain and many of the immigrants and local workers were left jobless. After the closure of the cotton ginneries and sisal factories, many of the workers moved out. This had major impacts on the CPR because those immigrants who were remaining in the area and were jobless turned to the commercial use of CPR.

4.3 Villagisation programme

Following the Arusha Declaration an ambitious villagization programme was introduced aimed at reforming the customary land tenure in a way to promote rural development to enhance the Ujamaa policies.

During the implementation of this program, traditional institutions at the local level were scrapped off their control on land and the same was vested into the state's politico-administrative units at village level, the Village Councils took over the administration and management of land and other natural resources.

The legislation and government practices reviewed above depict the background to the current village land tenure system that Tanzania is in today. Villagization programme's implementation has brought to light the precarious position of customary rights of occupancy in Tanzania. It has also been blamed for the confusion and certainty in customary land tenure that presently exist in rural areas of Tanzania.

The programme was political agenda to push through the rural development policies, which were to restructure the internal set up of Tanzania and mobilise its people to self reliance. It was seen as the best method to implement the policy of Ujamaa (African socialism) as contained in the Arusha Declaration of 1967. Under this programme millions of people were moved to collective villages. It was thought that this would bring about rapid rural development and ensure the early success of socialism in Tanzania. The year 1969 saw the beginning in the name of implementing socialism of massive forced movements of people from their traditional lands to newly established villages. There was no respect paid to the traditional land rights in neither the old settlements, which received newcomers nor the new areas as land was confiscated from some people and given to the others.

Apparently, the villagization programme was initially carried out without a legal backing. It was later, in 1975 when the government enacted the Villages and Ujamaa Villages (Registration, Designation and Administration) Act 6 the Villages Act, however, did not make specific provisions on land tenure in villages. The absence of a legal basis for villagization programme and the tenure confusion and insecurity it has created, is well reflected in a floodgate of litigation in courts of law to regain land lost during the reform period. Therefore, the land reforms introduced during the villagization programme were not achieved despite being monitored by government institutions at the local level. The government efforts of that time were non-participatory, backed by penal sanctions and were over-capitalised and hence doomed to a failure. With the re-introduction of local governments in 1982, the Local

Government (District Authorities) Act was enacted and it repealed and replaced the Villages Act. Provisions regarding land tenure and the institutional provisions that were in the Villages Act were incorporated into the Local Government Act. The government did not provide any clarification on how the floods of confusion created by the villagization process, was to be cleared. As such village lands remained under the siege of a floodgate of land conflicts. The villagization programme was unlawfully executed and absolute disregard of the legal and human rights of the people involved.

4.3.1 Post –Ujamaa

In the post Ujamaa time major political changes took place in Tanzania with an aim of spearheading development in Tanzania. The post independence Tanzania altered the entire administration, which it adopted from the colonial administrations in 1964. The state changed the native authorities to involve the people in the local communities in the process of self-government (Max 1991, p-25-26). The native system was complicated and expensive for Tanzania, which is economy and lack of skilled manpower contributed to internal restructure of administration.

The government introduced this reform to the public, as a means of increasing participation, benefiting the people. Actually, the reform implied the taking away of the little power of the common people had. This system was not to increase responsibility and powers of the representatives but turned out to be a bureaucratic system dominated by the government officials. Since the central government ruled almost everything, the people in the villages tended to lose initiative. The Tanzanian government created mixed authorities: elected representatives and appointed officials. Authority was placed outside the National capital, which was visibly exercised by the officials rather than by the local representatives. The government officials changed the political landscape locally and all the powers of the village representatives were neutralised and the states institutions took over all the management, however, the local representatives continued serving as informers to the government officials. In the early 1980s, decentralisation became the core spirit of self-help activities, which characterised the early years of independence in the early 1960s.

The reintroduction of local governments was to provide a more meaningful decentralisation of government administration, by facilitating more effective democratic participation in decision-making and implementation of the government policies at the village, district and regional levels' (Semboja and Therkildsen, 1990, p. 3). President Nyerere mentioned about the 'revival' of the Local Government system that (Max, 1991, p. 103):

There must be an efficient and democratic system of local government, so that our people make their own decisions on the things, which affect them directly, and so that they are able to recognise their own control over community decisions and their own responsibility for carrying them out. Again, as was the case in the former phase, emphasise has been put on participation, people making their own decisions. The reintroduction was based on a Chama Cha Mapinduzi (CCM) decision in 1980 and a set of five acts passed by the Parliament in 1982. An election manifesto of CCM issued during preparations for the first local government elections, held on 6 November 1983 stated that (Max, 1991, p. 199).

The purpose for the establishment of the local government authorities is, among other things, to strengthen the people's power in the governance of their nation. Such action was aimed at the implementation of the Party's democratic policy of using the people's institutions, such as the Parliament, Urban and District Authorities, down to Village Council, as special organs of people's participation in making decisions on matters concerning their own development.

The basic features of the local government system are outlined by the acts of 1982, differing in many respects from the former system that was in operation from 1972 to 1982. By the law of 1982, village councils, township authorities and district council were re-established in the rural areas (district authorities under the Local Government Act No. 7 of 1982). The re-established administrative system consists of seven layers: central government, regions, districts (district and urban authorities), divisions, wards, villages and sub-villages. The democratic aspect is reflected with the re-introduction of an elected body in the district and village council next to administrative staff.

The villages established in 1975 under the Ujamaa Village Act, is the basic unit of government. The head of the village government is an elected Village Chairperson, who is assisted by the appointed Village Executive Officer (VEO). Each village government has three standing committees: the defence and security committee, the social services and self-reliance committee and the finance, economic and planning committee. Sub-village chairpersons mediate between the rest of the village community and the village government. In addition, in each ward there is a Ward Development Committee operating under the council.

The Ward Development Committee is responsible for the implementation of decisions and policies of the district council, promoting the establishment and development of co-operative enterprises, and to formulating and submitting to their respective councils proposals for the making of by-laws.

The political situation in Tanzania is quite different as compared in the 1970s. The country has undergone political reforms to enable the economic policies to be implemented. In the last decade the transition from one single party to multi-party in the 1990s opened Tanzania to the global village. However, the first president near was against mullet-party his predecessor president Mwinyi placed Tanzania on world map of multi-party countries. At this point it was not only the political structure changes but also as well as the economy. President Mwinyi appointed a Commission to recommend whether Tanzania should operate in a multiparty environment. The commission presented a draft report to the president in December 1991, in which it recommended the adoption of a multiparty system. In addition, the commission recommended that 40 pieces of repressive legislation should be repealed and a body established to oversee the transition. A constitutional commission was to be appointed and a programme of political education in democracy was to be instituted.

In February 1992, the CCM repealed the single-party clause and paved the way for parliament to pass the Political Parties Act in June, effectively allowing for a multiparty system. The act stipulated that new political parties had to be registered with the Registrar of Political Parties with a minimum of 200 members each from the 10 regions in the country, including Zanzibar and Pemba. In addition, parties had to satisfy the Registrar that they were not formed on an ethnic, regional, religious or sectarian basis. In 1992, as political liberalisation became a reality in Tanzania mainland and Zanzibar Island. Some of the other major political parties included the National Resistance Alliance (NRA), the National League for Democracy (NLD), the Popular National Party (PONA), the Tanzania Democratic Alliance (TADEA), and the Tanzania Peoples Party (TPP), the Union for Multiparty Democracy (UMD) and the United Peoples Democratic Party (UPDP). The large number of opposition parties, as well as opposition disunity clearly favoured the CCM.

The new multi-party system allowed the president to serve only two terms in total 10 years. President Mwinyi, under the stipulations of the constitution, was only permitted to serve two terms and this necessitated the identification of a presidential candidate by the CCM. Through the influence of Julius Nyerere Benjamin Mkapa was elected as party president.

In May 1995, he castigated the CCM leadership for corruption and exposed major problems in the party. He made it clear that he would support a candidate who was untainted regardless of the political party, which such a candidate represented.

Although the ruling party, the CCM, retained power, it confronted an economy riddled with problems. There was raising unemployment exacerbated by Saps, the collapse of

infrastructure and poor industrial performance. The state was unable to provide even the most meagre of social services.

The transition of Tanzania politics affected the economic sector as the government tries to change its policies to attract more investors to the country without taking into consideration the demands of the rural population, which are hardly affected by all sorts of changes taking place in the country. The implementation of these new policies has polarised the livelihood strategies of the Rufiji people as well as other parts of the country. The rural areas have been exposed to a lot of difficulties in the post-Ujamaa period as compared to the urban population. The state protection of the interest of the investors has made the rural people to change their attitude toward CPRs, which are taken as the only rescue as Rufiji people continued struggling to survive under minimum budgets.

The income generating sources such as agriculture have been altered forcing the locals to find alternatives elsewhere for survival reasons. The problems facing the villages in the floodplain today are connected to changes in politics and economy in the country. The changes taking place at the macro level have strong shock at the micro level because the majority of the population rely on the government institutions to transact their business. The current system of politics in Tanzania favours those who are the members of the ruling party and has affected the distribution and management of the natural resources.

The political and economic constraints the rural people are undergoing are said to have made the local population to form local economic illegal institutions to cater for their interests. However, democracy defines the rights of every citizen in the country to access the basic necessities but still the state is not able to distribute the basic services to areas where they are needed. Despite that the decentralisation process has already been initiated the government lacks manpower and finance to implement it. Therefore the state could no longer manage the resources effectively but the notion that resources are free for all Tanzanians remained.

Access to CPR under state control was as well getting easy for state officials being in charge of controlling these resources were badly paid and therefore susceptible for corruption. Today those with bargaining powers have abused the government weak policies and now the minority groups are sidelined from decision-making and their livelihoods especially the pastoral communities have been nationalised and are under the control of external investors. Prior to multi-party politics the ideology of citizenship gave the Tanzanian freedom to access on resources wherever they wished but now the new privatisation policy is worse than the former.

An increase in CPR users also developed by the privatisation of the formally state owned irrigation schemes, releasing a lot of workers in search of alternatives in form of livelihoods. The village government, however, is supposed to manage the resources as it is indicated in the decentralisation policies but the same policies are against the closer of resources but rather to be opened for extraction to support local development.

As well through the building of new infrastructure (roads, bridges), the area Rufiji becomes an interesting resource area close urban centres such as Dar Es Salaam for a lot of Tanzanians wanting to use fish, wildlife, timber, charcoal etc for sale. All these external developments increased the interest in the commercial use of the resources in Rufiji compared to other regions of Tanzania such as for example the Pangani area, which had seen economic changes much earlier (for example with coffee production). Therefore Rufiji is getting more and more attractive and the use of fish, timber and wildlife a more interesting means to get cash compared to other ways of making a living in this region. The area has been receiving new people from urban towns coming to Rufiji as traders, commercial-farmers, loggers, commercial hunters and fishermen.

These people can use the resources more or less free because the local rules do not work anymore as the regulating and law enforcing institutions are dormant and the new state rules are not working as the state policies are not fully implemented by the government. This is another reason why so many people are interested in fish, game and timber because access is easy now compared to the time when the same resources where regulated by traditional institutions, which monitored, sanctioned the resource users through locally crafted by-laws, which were embedded in the lineage culture and beliefs.

But it is not only newcomers who are interested in the commercial side of these resources. The other crucial issue locally in the villages where research was made is that the village government officials are not on the pay roll, however, most of the government duties at the local level have to be administered by the village government officials. As they are not well paid by the government they are forced to look for Alternatives livelihood strategies for survival reasons. But other local people, especially young men, also are no longer interested in farming or other activities, which can earn them an income and have realised that common pool resources can be taken to the market and get converted into money.

These local people today make money out of the CPR themselves directly or they co-operate with traders and commercial fishermen, hunters or loggers. Most important local groups do now everything because the ethnical work division does no longer exist. Therefore all local

people do many things at the same time: Former farmers are now becoming also fishermen while others are also involved in hunting, logging and agriculture, and bicycle transport business.

4.3.2 Village administration Structure

Villages in Tanzania are the lowest administrative units under the local government structure and where the Community Based Natural Resource Management initiatives can be made. A village is defined under the Local Government Act as "a village registered under the Act"[15]. However, as of now, there are four types of villages in rural Tanzania namely; (I) certified/titled villages (after being registered and demarcated); (ii) registered villages (has 250 households and has been surveyed and demarcated); (iii) demarcated villages, and, (iv)villages that exist by custom. The local government structure goes from village-ward-division to district level. Under section 22 of the Local Government Act, the Minister can register a village as an area whose boundaries are definable and which has 250 households. A registered village can thereafter elect a village council. The latter is a body corporate and can sue or be sued. A village council is supposed to be working under the village assembly.

It is also important to note that the control of village land and resources that are supposed to be under the villagers themselves is, hitherto, yet to be achieved. One of the reasons attributing to this scenario is that the fundamentals of power and autonomy of village government are still in the hands of the higher levels of authorities. The Local Government Act itself has been tailored to make sure that village governments continue to be dependent on directives from higher organs of the government including District councils. For instance, in the local government hierarchy, a ward development committee is a step higher and has authority over the decisions of a village development committee.

Under section 163 and 164 of the Local Government Act the Village Assembly is given powers to enact by-laws and the village council is empowered under section 8 of the Villages Land Act to negotiate and enter into contractual agreements regarding village land. Before the enactment of the enactment of the Villages Land Act, 1999, the ultimate control of village land lied with the District Council. In the meetings of the District Council other than the 'full council' villagers are not represented. In such cases, matters pertaining to village land and resources are discusses and decisions are made without villagers being directly involved. Therefore, in most villages, villagers are not attending meetings of village assembly whenever

[15] CCM has been the ruling party in Tanzania for years.

they are convened[16]. This is the best example how land and resources tenure is administered at the local level. Village land Ownership under the Villages Land Act, 1999 and Management of Natural Resources.

Since most of the natural resources in Tanzania are under lands earmarked as village land, it is therefore logical to conclude that management of such resources is directly linked to how village lands are being managed and owned. Although 25% of natural resources are protected under gazette areas, the remaining 75% of the country's natural resources are under village land. Lack of a proper system of land administration and tenure in village areas where most of the resources are, would, undoubtedly, lead to serious natural resources depletion. It has already been conclusively established elsewhere by one study that the villagization programmes seriously affected the ecological balance of several places and hence led into severe food crisis in 1970s in Tanzania[17].

In 1999, the legislature adopted the Village Land Act. The Act although is yet to come into operation, it has tried to re-state the tenure in rural areas. Section 7 of the Villages Land Act defines 'village land' as including lands that are registered under section 22 of the Local Government (District Authorities) Act or those designated by the Land Tenure (Village Settlements) Act, 1965 or any other law or procedure. In addition, lands that have been occupied and used by villagers in accordance with recognised customs and norms of a given society for over a period of 12 years also fall under the category of village land.

Management of village land is vested into the village council as a trustee of the village land. In administering the village land, the village council is obliged to take into consideration factors that will ensure sustainable development and the balance between land use and its effect on the environment and natural resources on village land. The law also empowers the village council to allocate parcels of village land or grant customary rights to the occupation and use of village land. The powers of allocation of village land by the village council is, however, subject to the approval of the village assembly, which is the supreme authority on all matters of general policy making in relation to the affairs of the village.

Under section 12 of the Village Land Act, village land is divided into 3 categories. Land set as communal village land for the use by community land, which is being used or occupied, by an

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[16] The villagers decline to attend the village meetings because they did not see the importance of doing so.

[17] Kikula, I. (1986) Environmental effects of Tanzania's Villagization Programme, PhD Thesis, Griffith University, Austria.

individual or family under customary law (vacant land, which may be allocated for communal or individual use. It is clear from the 3 categories of village land that communal village land category can be used to create reserved areas for natural resources management at village level. How this law will be implemented to enhance Community Based Natural Resource Management remains to be seen given the current bureaucratic inertia and daunting political will.

4.3.3 The Overvaluation of the Shilling

In 1967, Tanzanian government created its own currency, the Tanzanian shilling, which was then overvalued. The purpose was to allow the government to import foreign goods, such as technology at a cheaper price. The state also controlled the banking system and it was decide, which economic sector the loans were is provided, and at what interest rate, such practices were known as mandatory interest rates and guaranteed Letters of Credit. The overvaluation of currency significantly reduced the real producer price received by Tanzanian farmers because they were paid with the local currency. But the profits they received were calculated with the official exchange rate between the U.S dollar and shilling; therefore, they received fewer shilling as by comparing with the shilling of real free market exchange rate. At the same time it also meant that the food produced in Tanzania was much more expensive than the free market price. Consequently it was more interesting to buy the food from international market and the government encouraged such practice because it believed that by allowing food to be imported, it was to reduce the internal food price (World Bank: 1981) and provide cheaper and more food for urban population.

The state established Marketing Board, which controlled the buying and selling of all agriculture products. This system permits the government to set up a purchase price, which does not reflect the real market price. Hence the government can offer to the urban people low cost food and at the meantime makes further profit on the export-oriented crops such as coffee. The profit made with the Marketing Board in theory will go to finance the growing urban industries and other social expenditure such as school and clinics. The major problem was that the Tanzanian government chose members of the Marketing Board but not by the farmers like in Kenya. Therefore the officials represented the interests of the state but not the farmers and that are why they are insensitive to their issues. In contrast, in the neighbouring Kenya, the members of Marketing Board are farmer elite elected by farmers, they are responsible to their constituency, and therefore farmers' economist interest is protected.

In Tanzania, government legally controls prices for basic foodstuffs; Nyerere argues that by doing so, people's interest is been protected. For the farmers, regardless the price of international market they will always receive the same tariff for their products, and for urban population, food will always be cheap. Hence, the government monopolised the buying of crops nationwide, the prices were fixed at below real market price, and agriculture producers could not negotiate the price with the government officials. When the cost of local food becomes too high, subsidies are provided to the urban people by selling the import food at below landed cost. Yet, the fact is in addition of import food and international aide, urban people still does not have enough food.

The socialist government's strategy was to be self-sufficient; however, ironically it could not even maintain a normal ability of food production. The collectivisation policy in the agrarian world was to promote a social equality among farmers; production per unit was considered capitalistic behaviours and discouraged or punished by the state officials. This is the reason way Tanzania experienced food crisis and had to import food from international market, which exhausts its currency reserve. The agricultural sector was to provide cheap food and at the same time to produce an income for the state through taxes. This income was thought to be reinvested in industrial development in order to substitute as much import as possible.

The government economist believed that private sectors do not invest where they do not have interests, hence the capital will only concentrate in certain area among few people. Secondly Import Substituting Industrialisation was a dominant economic idea of that time. The success of Soviet model convinced new Third World leaders and numerous world-leading economists that Russian's strategy of industrialisation is the key solution for the deprived poor nations. In addition, it was also a period of nationalism, newly independent states were looking badly to escape for the shadow of the past. In Tanzania, it had also a racial factor, because the Asians mainly dominated Tanzanian economy, and the anti-capitalist Tanzanian government decided to Africanised all-important economic sector.

In accordance with Keynesian theory, the government took initiative on nation's social economic development. The government was to protect local industries from exterior competitors under forms of tariffs and quantitative restrictions, and at the meantime the government was to construct small industries that produce basic consumption goods such as beverage, shoes, clothing etc. After the small industries become successful the idea was, the development would concentrate on heavier production and transport sector. The capital for these days was to come from international loans and taxation on agriculture sector.

In Tanzania, the taxation on agriculture sector was under two forms, the explicit and implicit one. Explicit taxes are the legitimised taxes; it includes export duties tax, and local tax, development tax and marketing and processing tax. For instance, Tanzania government imposes tax on exports, which are the main export oriented crops such as coffee, tea or sisal, and the price paid by the government is much lower than the free market price. In order for the farmers to sell their crops, they have also to pay marketing and processing taxes as an obligation. In addition farmers are required to pay development and local taxes. The means for government is to create the Marketing Board, which monopolises the purchasing process.

Implicit taxes including overvaluation and inflation tax. Those are more hidden taxes that diminish farmers' revenue further. Basically because the Tanzanian government overvalued the Shilling, producers received a profit that is lower than the international price. And at the mean time, the government pays to the farmers their credit after certain duration, so the government can takes advantage of inflation's effect on the formers profit. But the government also gained inputs under fix conditions.

As the central government in Dar es Salaam is the single player in the Tanzanian economy, in order to do so, it needs huge human resources for the purposes of executing its policy. Consequently, Tanzanian government copied from other socialist countries, for the purpose of to control rural farmers the system known as co-operatives. However, by the mid-1970's it was evident for the government that neither the extensive of corruption nor the increased political manipulation of co-operatives by the rural elite could be avoided, so the co-operatives were replaced by a public sector monopoly of agricultural Parastatals (Lele 1984). Parastatals received a complete legal monopoly over the purchasing, storage, processing and marketing. There are one dozen major assigned Parastatals.

According to Lofchie (1988:160) "these organisations have exhibited pervasive patterns of inefficiency." There are mismanaged and corrupted, after a study made by the Tanzanian government (United Republic of Tanzania: 1983) these authorities absorbed a large part of profit and as the result, they contributed significantly to the downward pressure on producer prices. Sometimes the bureaucracy overhead coast was so high that there has been no cash remainder for the farmers. As the result of the growing disenchantment with the quality of Parastatals and their uncontrollable financial losses, the government was once again considering to give the power back to co-operatives.

Between 1971 and 1981, per capita income declined nearly by half according to Uma Lele (1984: 159). Although the strategy of import substituting industrialisation, the Tanzanian

industrial sector expended at the same time; however, in 1980, the Tanzanian fifteen major industries utilised only 45% of its' capacity of production. The import substituting industrialisation did not work well in Tanzania due to neo-colonialism and core periphery system as the left Dependency school argued. Tanzania, like any other third world states are the victim of exploitation from the capitalised states from the north. Capital earned by Tanzanian government went back to the core western states to purchase machinery and weapons for security reasons and the government of Tanzanian is the victim of this vicious capitalism circle. Secondly, the government of Tanzania is too corrupted itself, and in order to maintain such insufficient bureaucracy, the young developing industry well as agriculture sector are over loaded by formal and informal taxes. In sum the Left Dependency School would blame the failure of Tanzanian economy on the industrialised countries and the incompetence of Tanzanian government policies.

The Centrists would argue that the Tanzanian government should have higher criteria on the selection of industries in which it is going to invest. The process of industrialization should be done step by step, however, in Tanzania everything was built within a very short period. The failure is also due to the poor implementation of government policy at local level, and the nature of enterprise ownership should be private not public, so the enterprises will face to external challenge consequently become efficient and competitive. But in Tanzania; however, it was public and the productivity was low. Tanzanian have a limited financial resources, strategically speaking the government should help only the healthy growing industries not the non-profitable ones. On the other words, to help the fittest to grow faster and let the uncompetitive ones disappear. But Tanzanian government in contrary helped the not competitive one with the means that should go to the better-formed industries.

The insufficiency and weakness of Tanzanian economy is also largely due to the protectionism, the Centrist thinks tariffs should be temporary duration, with a timetable to be phased out; therefore, the industries will be competitive by facing the international competition. And finally the Centrists would suggest that the ultimate cause of failure is the Tanzanian government's insensitivity to develop its agriculture sector and thirstier economy.

In concordance with Classical Orthodox School of David Ricardo and Adam Smith, agriculture sector is the most important one; they would definitively oppose to Nyerere economic policy, which in favours only the urban industries. Classical Orthodox School believes that in order to have a healthy economy, a balance must be made between the state's interference and market influence. Neither the influence of free market nor government is

prefect; they think both side have to work together. The market must be open because the free trade is the best system of economy with a lot of advantages, whereas in Tanzania under I.S.I, the market is closed, industrial production is only for the purpose of self-sufficiency and not export oriented. Technically, it could not be profitable if the machineries do not stretch to its maximum of productivity, and in Tanzania, as demonstrate by Uma Lele; in 1980 the Tanzanian industries utilized only 45%.

Economic reform in Tanzania

The economic reform program was adopted in 1986 after Tanzania experienced a steady decline in its economic growth in the late 1970s that led to a financial crisis in the early 1980s. The crisis is said to have occurred due to the economic policies, which the country pursued under a public sector led economy embedded in the Arusha Declaration of 1967. The Tanzania government tried to improve its economy through Ujamaa policies, which were considered to be a blue print for development. However, there were other factors, which contributed to the breakdown of the national economy the Ujamaa policy overshadowed them. It is said that the economy started declining because the terms of trade in the 1970s deteriorated. The breakdown or collapse of the East African Community in 1977, and the war with Uganda's Iddi Amin during 1978–79 affected the foreign exchange earnings of Tanzania.

Through these factors the objective of the 1967 declaration was to create an egalitarian society focusing on poverty alleviation and provision of welfare. The provision of social services to the majority of the population did not mature, as the country was not able financially to support all the institutions in order to make its dreams true. Realising the problems the country was facing economically, the state decided to find strategies to uplift the economy, which was by then in intensive care unit. The state was forced to formulate the home made policies to solve the problem. Because these policies focused on equity and poverty alleviation, the approach attracted financial support from a variety of development partners, including the World Bank. As a consequence, the government made substantial progress in meeting its social objectives, especially in extending primary education, health care, and water supply to rural communities through the mid-1970s.

Following the Arusha Declaration, the government adopted an interventionist approach through stringent price controls and established a large number of state enterprises with a view to creating public sector led development framework. However, according to IMF, the

approach produced adverse effects: it exacerbated distortions in the economy and led to a proliferation of parallel markets and unrecorded cross border trade (opened black markets).

These led to a decline in real GDP by an average of 1.7 percent per year during 1981–83, compared to an average annual increase of 4.6 percent registered in the 1970s and a decline in real per capita income growth.

In the absence of growth, the social services expansion program could not be sustained. The governments own revenue and import capacity was inadequate, and operating and maintenance costs could not be financed through external assistance. Meanwhile the country's ability to meet current external payments obligations, including the servicing of external debt, Became severely constrained; as a consequence it accumulated large external payments arrears. As the government incurred large fiscal deficits, which were financed primarily by borrowing from the domestic banking system, high rates of inflation emerged during the first half of the 1980s, accompanied by a sharp decline in real wages.

The government's expansionary policies, including massive growth of the public sector and stringent price controls worsened the economic difficulties and eroded incentives to produce. It became clear that Tanzania's development strategy was not sustainable. However, Tanzania continued to pursue this approach reflecting President Nyerere confidence in the model, reinforced by "moral" support and financial assistance from like-minded donor countries like Cuba and Russia (Hyden and Karlstrom 1993).

The economic situation continued to deteriorate and domestic pressure for economic reforms mounted. The disagreement between President Nyerere and the IMF on the policy stance led to a suspension of an IMF-supported program in the late 1970s. This served to further freeze up donor assistance. This pressure, together with continuing erosion external financial prompted an internal debate on the need for economic reforms.

In reassessing its development strategy, the government initiated a series of "home grown" programs, including the 1984 home grown reform package that were to be the key precursors to the subsequent Economic Reform Program (ERP). The period 1981–1982, a National Economic Survival Program (NESP) was formulated to address the economic crisis in the country. The NESP initiative sought, through government intervention and intensification of the control regime, to close the resource gap. This program did not manage to bring economic recovery in the country. The government was now forced to listen to the international organisations after the home made programs failed to turn the economy.

The IMF gave Tanzania options and this was to accept the Structural Adjustment Program (SAP) and then get supported. The program was to assist the government to turn its economy through downsizing of the working force by retrenching the civil society, which was considered to be taking too much money home than what the state profited. The other area to be corrected was on non-profit state companies to be closed down.

In 1982–1983 the (SAP) program was introduced to finance the fiscal deficit largely through domestic borrowing in the absence of external assistance. The initiative was unsuccessful in turning the economy around because it did not address the fundamental issues of price distortions, including and in particular the exchange rate. The government was preoccupied with devaluation in terms of its link to national prestige and strength, and fear of inflationary pressures.)

The 1983-86 programmes began with the short-term objectives of reducing inflation, and cutting public sector and balance of payments deficits. In the medium and long run the objectives were the restructuring of economic activity and government finances, and improving capacity utilisation and labour productivity. In order to achieve these objectives the government initiated cuts in public expenditure (mainly defence and social services), repeated devaluation of the shilling against the US dollar, and increased taxes on beer, cigarettes and other consumer goods. Support of the agricultural sector was put on the agenda by the raising of producers' prices and of the share of agriculture in the development budget, and by the removal of export taxes on agricultural products and the ending of the restrictions on inter-regional trade.

The outcome of these policies fell far short of the objectives, partly because the success of the SAP was contingent on the inflow of foreign capital, which did not materialise in sufficient volume. Consequently the required level of imports was not achieved. The expected gains in terms of higher growth of agricultural output and lower inflation were also not forthcoming. The manufacturing sector continued its decline up to 1987, agriculture grew at a rate far below that in the first half of the 1970s, and inflation remained high by the 1970s standard.

The failure of the 1983-1986 SAP could be attributed to its partial response to the long-term structural problem of the Tanzanian economy. According to Singh (1986) it is related to its inability to generate enough export earnings to pay for: the importation requirements that would keep the domestic production at a normal level of capacity utilisation and the importation of consumer products.

It appeared the problems, which the economy was undergoing continued and more so new negative avenues were opened during the implementation of the SAP, which will be dealt later. The government continued to search for the economic doctor and three years later after the failure of SAP to turn the ill economy the government of Tanzania introduced a new programme known as Economic Recovery Programme.

The programme was adopted in 1986 and was named the Economic Recovery Programme (ERP), which recognised the above structural problems and called for increased development expenditure to prevent further deterioration of physical infrastructure, and for increased imports of raw materials in order to increase industrial capacity utilisation.

In addition the ERP advocated for improved agricultural price incentives, reduction of budget and balance-of-payments deficits, and reduction of inflation. Liberalisation of trade and general economic activity, and regular adjustment of the exchange rate were also part and parcel of this programme, which in combination with the 1983-85 SAP formed the basis of an agreement with the IMF. An important feature of ERP was its shock treatment approach, in particular in the area devaluation. It called for larger devaluation than SAP and at more regular intervals.

ERP also went further than SAP in the liberalisation of foreign trade. Own funded imports of a wide range of consumer, intermediate and capital goods were encouraged. Transport equipment was given particular attention, because lack of transport facilities in the 1980s severely constrained the country's ability to export further reducing import capacity. The ERP took the reform of government finance further by reducing recurrent expenditure, and continued with the streamlining of development expenditure. To reduce recurrent expenditure, cut backs were planned in public sector employment and there was to be a partial transfer of responsibility for education, health and minor roads to local government. On the revenue side of public finance, more efficient tax collection and adoption of user charges were put on the agenda.

The reform of agricultural policy also included some degree of liberalisation of the internal food trade. On the land tenure front, there has been a shift away from communal ownership of Ujamaa to private or group ownership. In order to improve security of tenure peasants could now get land on a long-term basis (33 years). The policy also suggested that they should be provided with land title deeds to enable them get development loans from co-operative banks. The issue of land title deeds is far to be realised by the villagers especially in Rufiji who are

still under the Ujamaa policies, despite decentralisation on administration and management of the natural resources as stipulated in the land act of 1999.

Since the introduction of ERP in Tanzania the economy has shown some sign of recovery. GDP has been growing, in real terms, at an average rate of about 4 per cent between 1986 and 1990 (Tanzanian Economic Trends, 1991, Vol. 3, No. 4: 48).

However, the GDP has improved this can be accounted on the urban areas where the infrastructure and other services have gone back to function but the rural population still waiting for the services. In simple terms live in the villages continues to be harder as the majority of these people are leaving on less than one dollar per day. In general adjustment policies affected the poor people in three broad ways; First they affected their incomes, either through changes in wages and employment, or through shifts in prices, altering the returns from productive assets; second, the change of prices of their most important purchases; and finally, the shift, the level and composition of government expenditures, particularly those in the social sector' (ODI, 1986:1)[18].

Table 2 presents the trend in average real wage of an adult male employee from 1969 to 1987. Real wages declined sharply from the mid-1970s to the early 1980s, recording a gradual decline thereafter. By 1984 the average real wage of an adult male worker was 41 per cent of its 1978 level. A similar pattern emerges from the trend of real minimum wage, which more accurately reflects the pressure on the low-income groups. In 1984 the real minimum wage stood at 48 per cent of its 1978 level[19]. The adjustment programmes of 1983 and 1986 raised minimum wages by a modest amount, but a persistently high inflation eroded any gains and by 1984 the real minimum wage was 27 per cent of its 1977 value[20].

[18] ODL means open distance learning

[19] Statistical Abstract 1987, Table E13, p.41, and Table Q2, p. 174.

[20] Campbell (1992), Table 5.2, p. 99.

Table 2: Minimum Wage and Consumer Price Index, Urban Areas, 1977-1988

Year	1977	1982	1983	1984	1985	1986	1987	1988
Min-wage per month	380	600	600	810	1053	1053	1370	1370
Consumer price index	100	254	323	439	585	175	1007	1322
Real min-wage	380	236	186	184	138	136	136	104
Sembe per Kg (a)	N/A	2.5	2.5	8.0	13.7	13.7	15.9	18.6
Min wage/sembe(b)	N/A	8.0	8.0	3.4	2.0	2.6	2.9	2.5

Source: National Socio-economic Profile of Tanzania, 1989, Table BN 2, p. 25.

Notes:

The wages in Tanzanian shilling (TSH)

(a) Maize flour, the staple food, at official price.

(b) Daily minimum wage/Official Price of a kilo of Sembe (maize flour).

Table 3: Increase in the Retail Prices of Selected Commodities 1985-88. (TSH)

Commodity	1985 retail price	1988 retail price	% increase
Sugar 1 kg	15	55	266
Cement ton	2112	8400	297
Roofing nails 50kg	3162	12932	309
Soap one bar	27.6	134.5	396
Kanga (b)	75	690	920

Source: Based on National Socio-economic Profile of Tanzania, 1989.

Notes:

(a) The Consumer Price Index rose by 126 per cent between 1985 and 1988.

(b) The dress material sold in pairs.

The impact of adjustment on wages can be better appreciated when we take account of the price of sembe (maize flour) consumed in many of the rural households as staple food. Before the removal of subsidy in 1983 a day's minimum wage would buy 8 kg of maize flour, compared with 2.5 kg in 1988. (See table 1). A similar trend emerges for other basic foodstuff and essentials in general. Their prices rose well above the general consumer price index (see Table 6). According to one estimate a worker's monthly wage in 1988 could only buy three days of food for a household of six (Tripp 1993: 164). Another survey found that low-income households spent 85 per cent of their family expenditure on food (Bryceson, 1987: 174). By 1990, rises in producers' prices of crops, reform of the marketing system and removal of restrictions on inter-regional food trade stabilised food prices. However, in 1990 a worker on

minimum wage had to pay more than half the take home pay just to maintain the energy requirements of a family of five, the corresponding figure for a middle grade worker was a fifth of the take home pay (Government of the United Republic of Tanzania and UNICEF, 1990, p.13). The decline in real incomes has not been confined to the lower income groups. An average family could not subsist for more than two weeks on the salary of a top government executive (Maliyamkono and Bagachwa, 1990).

4.3.4 Disadvantage of Economic reform programmes

The economic reforms in Tanzania had positive and negative impacts on the economy as well as the livelihood strategies in general. In this case the two programs will be analysed separately. The structural adjustment programme, which brought many economic sectors to standstill was seen at first to be the best but had shortcomings. The programme contributed to the breakdown of the rural co-operative societies, which used to supported the local farmers through the purchase of the farming facilities at the low price but this programme was against it as the government was advised to close such co-operatives down to save money, which the workers used to be paid as salaries.

The removal of the government subsidies affected the poor farmers who depended on the government for their production. In the case of Rufiji floodplain many household stopped farming because of financial problems. As the production reduced in this region the locals were forced to look for alternatives to support their families and this was the time the CPRs markets became active. The government was encouraged to important instead of relying of the local products, which were expensive but the program policies failed to address the needs and interests of the rural people who depended on agriculture.

The retrenchment of the working civil society both in urban and rural areas caused major internal immigration in the country. In Rufiji floodplain the remaining lot from the closed sisal factories and cotton ginnery joined the commercial business of CPRs. The most affected are fisheries, wildlife and forestry as many of them formed illegal cartel to transport these products to various destinations. It can be said that the SAP programme interfered with the social set up in the floodplain. The gender specific roles were now rotating within the household members and the household were forced to diversify to spread their risks. The government experienced more problems as compared in the 1970s. Its institutions were not functioning properly as the workload over the manpower, which was available. This can be supported through the failure of proper management of the CPRs in the floodplain. The best example is Selous Game reserve whose resources were threatened by the poachers as the state

failed to provide patrol game ranchers as the financial status did not permit more people to be employed. Due to lack of sound services in various sectors the government lost a lot of the revenues.

The impact of economic crisis and adjustment on agricultural earnings, which provide livelihoods for the vast majority of Tanzanians, has been less drastic than that on wages. In 1986 the ERP raised the real producer prices of agricultural goods, which then remained stable for the rest of the 1980s (but still were well below their mid-1970s level).

Taking the cost of inputs into account the stability of real producer prices in the late 1980s appears less impressive. While the official producer price of maize doubled from 1985/86 to 1989/90, the retail price of improved maize seeds rose by more than three times in the same period (a problem for rural farmers and many people were discouraged on farming). Similar differences can be observed for the producer prices and seed prices of other crops like paddy, beans and wheat. These trends in producer prices and input costs are direct consequences of adjustment programme.

The devaluation and deregulation led to higher input costs, which have not been fully compensated for by higher producer prices.

Only those sections of the rural population with enough resources and access to cheap credit were able to take full advantage of the liberalisation of the agricultural sector but through personal observation and the information from the local people, this system reduced them to beggars. The locals say that SAP brought them to the edge of the river and ERP pushed them into the river of strong waves. The locals find it had today to adjust to the daily life as the economic string continues coming closer to their necks. All these programmes were meant for the few with bargaining powers to profit said a villager. The Rufiji people continue regretting why their government cheated them to embark on cash crops, which have no meaning any more in the region. There is nothing left for us said the villagers from Mbunju/Mvuleni as well as Mtanza/Msona.

The government has sold everything even where we used to get vegetables from to the outsiders. These days we do not know whether tomorrow will come as things might change within hours and you are told get out and create room for the owner to plan his land. This has discouraged the rural people to devote and invest their profits in long term profitable business. The people are exposed to object poverty in these rural villages as many have no hope and have lost confidence in the country leadership. The local people blame their leaders and call them failures in leadership and management of their country and many of the programmes

introduced are hardly implemented, however, the local people are the targeted group to benefit from such policies, which have opened the local economy and now has been left drifting and abuse from some individuals determined to capitalise on the situation and enrich themselves.

However, the government introduced the Economic recovery programme, it is said to have led to further marginalisation of the landless labourers and peasants with a very limited resource base. “Rural producing households are increasingly unable to reproduce themselves through agricultural income alone and are forced to seek casual labour to supplement their farm output” (Stein, 1992: 79).

It is clear that the burden of managing and adjusting to the crisis has fallen disproportionately on real incomes. The hardest hit groups have been those who had to rely solely on a wage for their subsistence. Access to land and agricultural activity has to some degree cushioned the impact for the peasantry. However, the rural population is far from homogenous. The poor peasants and agricultural labourers have also been adversely affected.

The above development has had a direct bearing on the way in which households had to “adjust” in order to meet their basic needs. Changes in employment and economic activities of households are not only a symptom of the crisis but also a reflection of the coping and survival strategies on the part of the population.

The adjustment that took place was on the wage side, and as it is shown in the previous section the decline in real wages was drastic. Politically it is much easier to reduce the wage bill as part of a general public expenditure cut through reduction of subsidies and effective freezing or reduction of real wages than through redundancies. This leads us to the other two developments in the labour market, which simply show how households tried to protect their living standards in the face of the economic crisis and adjustment.

The pressure to earn cash income in small peasant households has led to a more pronounced division of labour within these households. Non-farming activities have become important components of the household survival strategy. According to Mbilinyi (1988: 575) ‘men left first the family farms, then agriculture. These tendencies caused a shift in the sexual division of labour, with women’s work becoming intensified. Women also joined the low paid casual labour force, non-farming enterprises to earn a living to support the family.

Today more and more women are seen trading on small products like vegetables and fried fish in the local village markets to supplement what the husbands remit for the household budget.

In Rufiji floodplain self-employment has been a much more important type of income earning activity for women besides the household work. It was said the women's income has filled the budgetary gaps where the household men have failed to provide the required budget money due to economic difficulties facing the income sources in this region. The traditional norms, which regulated division of labour in the household, gave men the upper hand in management of the household needs and provision of all material goods needed. It was said those activities, which were considered to be shouldered by Men are open to women today. The economic constrains have opened new avenues for the women in this region and that is a positive factor because in some years back women were recognised as people of the kitchen.

The additional incentive for cash income for poor households has generated pressures for the use of time in production, which may be at the expense of time spent for care and feeding of children. We can say that the household expenditures have sealed the traditional customs, which were applied on division of labour locally. The local men were considered to be real when all the social, political and economic obligations were attended to. The researcher observed that economic problems are stronger than social and political issues. This can be supported where a woman can go out with another man but the husband bothers less to ask because she will bring money home, which every member gets a share from through food bought from the cash, which the woman earns through unfair means. The local people were open and said the economic problems the villagers are undergoing today have ruined the social morals in the community. The problem starts from food insecurity in the household and the immediate but not long-term solution is to move out and bring bread to the table. The oft cases happens in households headed by women. Such households are said to have no alternatives other than to engage in soft prostitution has the locals call it. All these happen because of food insecurity and other basic needs in the household.

A case study that was carried out on the household budget in the two study villages in Rufiji floodplain between 2002-2003 revealed that the more developed a village is like, Mbunju/Mvuleni compared to other villages in Rufiji floodplain had an average nutritional status than the less developed and remote village like Mtanza/Msona. The question is why despite the fact that the two villages have comparable levels of production and that Mbunju/Mvuleni had slightly smaller household size but is mostly affected from food shortages contributing to lower nutritional status in most of the households. It was said that, more of the food from Mbunju/Mvuleni village left for sell in Ikwiriri Township or other towns such as Kibiti and resulting to shortages of staples in the most of the households within

a short period after harvest. The staple food is hardly compensated with alternative crops such as cassava and potatoes, which can be alternative during the hunger period (Meroka 2003).

Household food security analysis was based on the intra-household factors, and processes that are linked to gender priorities and decision making in this region. The Rufiji people give the men upper arm on family matters and have the final say in terms of food production and management. However, it was said that men are the decision makers in the household much of the work involving food production is done by women and supported by their children. The study results revealed that the household men take the grains to the market to sell and the total amount from the whole sell is kept by them. The women are not in favour of selling food if this would reduce the stocks for their household. The men are more likely to practise the overselling of food for example in Mbunju/Mvuleni Village, because of being closer to the commercial market Ikwiriri and the village is linked to the main transport system by a busy feeder road passing through the village. The availability of transport and frequent price information from urban markets rationally tempts the selling of foodstuffs by the villagers at a high rate and many of the households remain without sufficient food until the next harvesting season. It was said that the household heads have to spend much of the money on non-food items such as clothes, electronics, bicycles and beer, which not all family members are involved in. In fact beer consumption particularly in Mbunju/Mvuleni Village pose a major threat to food security and availability as the young newly married couple's demands of costly items are fashionable and there possession has a social prestige and identity in the society. However, it was said that, beer brewing represents a source of cash for women in other households that enabled them to make ends meet, the involved individuals in the business lacked basic calculations and proper strategies, on how to make profitable business from the grains obtained from the family granary. The net effect, however, seem to be in Mbunju/Mvuleni village in the central floodplain, which has lower food security than Mtanza/Msona village in the north-western part of the floodplain.

Mtanza/Msona inhabitants have managed to achieve certain degree of food security through the cultivation of minor crops such as cassava to substitute the major staples when they run out. Moreover, the educational gap between men and women is lower in both villages, which may well have given women in both villages disadvantages to have control over the resources of the household.

Despite all these problems facing these twined villages the blames goes to poor policies and the ruling political party of failing to protect the local peasants from middle men traders, who

have made attendance of buying the agricultural products before reaching storage facilities. It has been already mentioned in this chapter that the continued insecurity of food supply has left the local people with alternatives other than to continue exploiting the CPRs for survival reasons. However, the Tanzanian policies supports free primary education, some families are not able to send children to the few primary schools in the District because education facilities continued to be expensive for the low-income earners and some families have lost hope in education today. The most hit regions are interior rural areas such as Rufiji in the coastal region, which some police implementers consider to be dominated with traditional beliefs and sorceries and it is difficult to educate such people to change from their long term behaviours and traditions. But the reality on the ground is different when compared to the statements of the government officials. The schools in this region are poorly equipped and the working force in many of the schools are engaged in private issues rarely turn up to school. The children have been demoralised with such conducts and many of them have gradually dropped from school and have moved to urban areas or have joined economic activities such as fishing and forest product harvesting for boys. The young girls are doing odd jobs in towns such as Ikwiriri and Dar es Salaam as housemaids or have joined commercial sex to earn a living. The social moral have been eroded because food is important than the cultural morals said a middle-aged woman in Mbunju/Mvuleni. It is not easy to sleep while you have nothing in the stomach and that is why our young boys and girls are doing odd jobs to sustain their lives said the village chairman of Mtanza/Msona and the same argument was repeated in Mbunju/Mvuleni in focus group discussions. We can conclude that the implementation of the SAP and ERP in Tanzania created an economic gap and food insecurity, which will take many years to be filled. The rural people continue suffering and that is why the implementation of policies in these areas is difficult and the villagers are ready to resist any attempts to block their livelihood strategies.

4.3.5 Liberalisation

The liberalisation process was introduced in Tanzania after the first president Nyerere had stepped down in 1985 because of economic problems the country was facing. He accepted the mistakes made by the government and apologised to all Tanzanian who were suffering because of the bad economic policies.

President Mwinyi took over in 1986 with a clear political mandate to implement economic reforms in Tanzania. He ushered in the free market era and set the stage for structural and

some institutional reforms, reversing the decline in per capita GDP that had occurred in the early 1980s.

Upon assuming office in 1986, President Mwinyi spearheaded the liberalisation efforts. It was said having championed the liberalisation process, albeit on a smaller scale in Zanzibar, Mwinyi forcefully promoted the process on the mainland. This phase of reforms emphasised getting the prices right and it entailed dismantling a set of policies designed for a centrally planned economy that emerged after the Arusha Declaration of 1967. By the end of 1991, the government had implemented a substantial element of the liberalisation process.

Between 1986 and 1991, the government took specific measures to liberalise prices, building on the 1984 pre-reform efforts through a gradual reduction of items under price control, until all prices were liberalised and the National Price Commission (established in 1973) was abolished. Liberalisation of imports initiated in 1984 accelerated as a result of the success of the own-fund import scheme. Imports through the official foreign exchange channel were progressively liberalised through the Open General License (OGL) scheme established in 1989, which covered large volumes of eligible imports and later expanded from a system of permitted goods to a "negative list" identifying items that are specifically excluded.

Imports as a share of GDP increased from about 14 percent in 1986 to about 47 percent in 1994 (World Economic Outlook, 2003) By reintroducing co-operatives and allowing private sector participation in domestic trade, the government ended Parastatals' monopoly in procuring, distributing, and marketing of agricultural commodities. This gave producers some flexibility to export products directly, outside the official channels of the marketing boards (Lofchie 1993).

Building on the 1984 "home grown" program, the government made progress on the exchange rate policy, despite continued political opposition. The changes in the economic policy regime led to increase levels of economic activity stemming from liberalisation efforts, availability of consumer goods, and market determined producer prices. GDP growth averaged about 5 percent per year between 1986 and 1992, reversing the real per capita income decline experienced in the early 1980s.

Despite considerable progress on structural reforms and institutional restructuring, weakened leadership and commitment to further reforms saw the economic program derailed during the three years of President Mwinyi second term. Nonetheless, his presidency played a major role in unleashing of market forces, including initiating the privatisation process and institutional and structural reforms. The macroeconomic stability was not achieved mainly due to the

government's inability to control credit expansion to public enterprises, massive tax exemptions, poor revenue collections, and tax evasion. The large increase in tax exemptions was symptomatic of corruption and governance issues. Meanwhile, gains made earlier in reducing inflation were reversed: inflation rose from about 22 percent in 1992 to 37 percent in 1994.

The Mkapa administration from the outset pursued prudent fiscal management. To enhance revenue and address the problem of massive exemption and tax evasion, the government rationalised the tax system and improved tax administration through the strengthening of the Tanzania Revenue Authority. Value added tax was introduced to replace the cumbersome sales tax and broaden the tax base, and to minimise revenue leakage.

During this period, GDP growth rate reached 6.3 percent in 2002, up from 3.6 percent in 1995, and growth in per capita GDP accelerated to 4.2 percent in 2002. As incomes improved, the number of households below the poverty line declined marginally from 38.6 percent in 1991-1992 to 35.7 in 2000-01. However, the GDP increased the rural poor income sources did not improve because the markets of agricultural products remained in the hands of the middlemen. As already explained the urban population welfare was analysed and general conclusion was made on the GDP growth but in the real sense the government continued depending on the foreign financial assistance to run its institutions.

The Mkapa government has implemented a number of initiatives to improve access, enhance quality and delivery of public service in education and health services. With respect to the education sector, the government redoubled it efforts to improve access to primary school education and enhance its quality through increases in sector budgetary allocations in line with the poverty reduction strategy within the context of Primary Education Development Plan (PEDP). With donor financial assistance, the government abolished school fees in 2001, established the Education Fund for children from poor families, and introduced a captivation grant for expenditures on learning and teaching materials and school administrative purpose.

On the health sector front, the government raised awareness of the health sector reform program through the Health Sector Development Program (HSDP). However, policies have partly been implemented the urban community has profited from the initiative mainly the education sector. The rural population continue to suffer as many of these schools are found in the remote areas like Rufiji where transportation means is based on private bicycles. Despite this region has been opened most people are reluctant to take permanent settlement and the state has not done much to improve the situation. On the other side the government

has made some achievements on the macroeconomic and structural adjustment since the mid-1990s (World Economic Outlook, 2003).

The reforms have also addressed land ownership issues. For example, the processing of applications for urban land has been reduced from five years to within one month of submission of the application. The title deed process has been reduced from 10 years to two months between the offer of the title and its registration. Progress has also been made on the issue of access to village land. Under the Village Land Act (5) of 1999, a village council should issue a title deed within two months of application. Issue of the title deed has been in the past taken long as 10 years. The Land Act (4) has also been amended to reflect the concerns of the Tanzania Bankers Association regarding the use of land as collateral for banks lending. The liberalisation of the financial sector has substantially transformed the industry into a diversified, competitive, and vibrant sector.

The reforms, which have taken place in Tanzania originated from the economic crisis the country faced in the 1980s and were encouraged by president Nyerere's 1981 speech, in which he acknowledged making mistakes on the economic policy front and urged "kujikosoa" (a Swahili term meaning "a critical self-assessment").

The liberalisation process did not profit all equally as it is supposed to be. The government decline to control the prices of basic commodities has affected the common man at the rural areas whose incomes depended on the selling of agricultural products. The little income is used on the household expenditures and nothing remains to invest. The liberalisation of the services has denied the majority a chance to access such services especially the health sector, which the poor hardly access without payments. The interpretation in the rural area is different as like someone from the urban region. The rural people say (soko uhuru) meaning free market where one can do whatever you want. This interpretation has affected the CPRs especially as the locals compete among themselves to extract as more as they can to respect the principle of liberalisation. Through this process many of the CPRs found at the local regions are under pressure as everyone is doing what seem to right to her or him. The Rufiji people argue, if the state can open all the markets to the foreigners going to the forest and hunt or cut some trees for timber is not wrong as a citizen of Tanzania. However, the locals experienced the impacts of the SAP and ERP the recent policies liberalisation and privatisation are shaking all angles as the external resource users are frequenting in and out. The locals of Mbunju/Mvuleni are worried what is going to happen to their CPRs in the next five years. The urban rich have started acquiring land in the area (see picture annex 1).

Liberalisation policies in the recent years failed to address the negative impacts of the policies to small-scale farmers and traders and the protection of local markets against the giant producers in the west. However, the intention of liberalisation was to increase the chance of the peasants to access the markets but have turned out to be a burden to the local economy, which had been left toothless. The consumption behaviour at the local level has contributed to diversification of the livelihood strategies. The CPRs exploitation in Rufiji floodplain intensified in the 1980s after the government introduced the "home grown" policies to revamp the economy, which was in intensive care unit. The restructuring of economic sectors affected the main income source of the Rufiji people (agriculture) and thousands of people were unable to produce as the government cut down the agricultural budget and this affected the people of Rufiji as well as other parts of Tanzania. The dependency on the government turned from one day to the next and the local population hardly received agricultural inputs as the government co-operatives closed down.

In the pre-colonial time the ethno professional groups used the CPRs purely for subsistence but today these resources have developed market values, which have made them of high demand at local, national as well as international markets. In the past people used to extract what they only wanted for the household use but today the market economy has changed the value of the CPRs and both local and external actors see these resources as money without considering their role in the daily life of these local communities. The market economy and the economic constrains facing the rural population especially have contributed to over exploitation of CPRs in the floodplain leading to vulnerability of these resources.

The competition of access between the locals and the newly external actors has made the management of these resources complicated and complex. It is not only the external users have caused problems but also the locals have to share the blame. The absent and presence of the state is the crucial problem facing the management of the CPRs in the floodplain as well as other parts of the country. The traditional institutions used to support the cohesion of the villagers but today such institutions have no base in the current administration. The weakness of the state institutions and poor accountability from the state officials have contributed to the erosion of state credibility in CPRs management because the entrusted state officials to manage these resources have diverse interests. The free management of the CPRs in the floodplain, which the council of elders used to offer in the past is lacking today because the state policies lack transparency and only support potential developers and the locals livelihoods are in jeopardy as political regimes and economic changes, technology,

infrastructure and relative prices are commanding the management of the CPRs in the country.

It was noted that the market economy, Improvement of infrastructure and the change in relative prices have affected the social cohesion and the sharing of CPRs at the local level. In the traditional institutions the CPRs united the lineage members as all profited from the resources as compared to the present time, where the locals are considered as mere custodians, however, these resources are within their territorial boundaries. The newly state policies forbid them to get access to the resource unless permission is given from the district level, which is the representative of the central government. The violation of the villagers rights through state policies now the villagers are co-operating with illegal resource poachers for a fee. The incoming of the external users has changed the traditional attitudes of the locals towards the CPRs management. The cultural values and traditional religion related to these Resources have been overcome by the market economy and the traditional economy, which carted for their sustainability have been transformed through globalisation, liberation and privatisation.

But it is not only newcomers who are interested in the commercial side of these resources. The other crucial issue locally in the villages where research was made is that the village government officials are not on the pay roll, however, most of the government duties at the local level have to be administered by the village council officials. As they are not well paid by the government they are forced to look for alternatives livelihood strategies. But other local people, especially young men, also are no longer interested in farming or other activities and have realised that common pool resources can be converted into money. The local people today make money out of the CPR themselves directly or they co-operate with traders and commercial fishermen, hunters or loggers. Most important local groups do now everything because the ethnical work division does no longer exist. Therefore all local people do many things at the same time: Former farmers are now becoming also fishermen while others are also involved in hunting, logging and agriculture, and bicycle transport business (Bodaboda). We can conclude that the liberalisation process enabled the strong to be stronger and the weak were pushed out of the market economy. The process has increased the bargaining powers of some individuals who are well connected in the government and now the economy is under their control.

4.3.6 Formal institutional setting

In this chapter the institutional setting in general will be outlined. The government of Tanzania under the leadership of president Nyerere took over the colonial laws after independence, which was changed in the 1967 in the Arusha declaration.

At independence, it was unclear which development path Tanzania would follow. Nyerere espoused egalitarian concerns and indicated his preference for a socialist economic policy. The first five years development plan emphasised the Africanisation of the bureaucracy.

The introduction of the Ujamaa policy in Tanzania was the start of formal institutional setting during the reign of Nyerere. The new policies lead to the restructuring of the internal politics in the country. The process affected all traditional institutions, which were formerly administered by the lineage leaders in the country. The new policy was to give the Tanzanian a priority to contribute in development programmes. Nyerere hoped through Ujamaa the nation will develop faster than relying on external assistance.

The changes took place on social-economic and political institutions. The Ujamaa policy gave the president power to control the entire administration in the country and the management of all natural resources were from the local level to the central government. The government of Nyerere established different ministries, which took over the entire management and the president acted as the custodian of all natural resources including land. The transfer of land to the office of the president lead to the shortage of resources for the local people in the rural areas as the locals were denied access to resource, which were within the areas considered to be under the government control. The government used its power through this system to expand the national parks and opened new Game reserves to accommodate the wild animals whose population was increasing at a an alarming rate. It is said that the government took traditional land without any compensation to the local villagers whose land was taken by force as the lineage boundaries were reorganised for the interest of the central government. However, the state promised for better life for the local people nothing happened but the locals suffered more as their livelihoods were nationalised and no alternatives were given to them by the central government, which promised to implement its policies with a human face. The changes of land tenure in Rufiji floodplain forced many ethno-professional groups to change their livelihood strategies, which later affected the limited natural resources as the regulation and monitoring mechanisms were relaxed by the central government and open the resource to other interested harvesters. The dismantling of the customary land tenure in Rufiji floodplain, which had existed for decades and introduction of Ujamaa villages, which turned

out to be a social-economic and political problem to the Rufiji people, it is said to be the start of the problems the Rufiji people are undergoing today. The concentration of people in newly Ujamaa villages increased the demand of the natural resources, which were scarcely spread within the village boundaries. The competition of the natural resources in the region continued to rise as the demand increased and most of the resources become vulnerable. The new formal institutions at the grass root level were disorganised and the office holders become Corrupt as the central government was not able to support the management of these institutions. The extension of the game reserve towards the community land angered the locals as their main livelihood strategy agriculture was affected and the food insecurity took centre stage.

The change of customary land tenure opened all CPRs to external resource user as the government declared all CPRs were under the management of the central government. The central government gave freedom to all Tanzanian to migrant to wherever they wanted regardless of the geographical position. This new democracy of movements affected the management of the CPRs especially in Rufiji floodplain where the new comers interfered with traditional institutions, which had been established by the Rufiji people for the management of the CPRs in this coastal region. The newcomers were hardly stopped to use the resources, which the locals considered to be communal property formerly. The ideology of citizenship was applied by external resource users, which made the management of the CPRs difficult. The immigrants are said to have abused the traditional resource use norms and regulations, which the locals considered and recognised as the binding factor to all resource users in the Clan/lineage. The immigrants mainly from distant areas especially the highlands were seasonal resource users, who came shortly and left after the season was over. It is said that these external resource harvesters had no interest on the sustainability of the resource but their economical interest was the priority and the local's needs were overlooked. It is said that these immigrants used the civil courts to threaten the local leaders, who tried to resist their misuse of the CPRs in the Rufiji floodplain.

The resettlement of the Rufiji people related to change in customary land tenure contributed to the change of behaviours towards the CPRs and many are said to have started using resources without considering the effects inflicted to them. The villagisation of the agrarian sector and the overhaul of manufacturing industries during the new government affected the livelihood of many people as the new policies proved weak to deliver as it was indicated. The formal institutions are said to have increased food insecurity in the Rufiji floodplain as much of the land were left unoccupied due to the consolidation and resettlement of the scattered

hamlets in the floodplain. It is said that the newly state institutions were not able to control the use of CPRs in the floodplain as well as the rest of Tanzania. The crafting of the new institutions with new management policies interfered with the subsistence food production in the floodplain and many households in the new Ujamaa villages started to diversify their livelihood strategies for survival reasons. The local residents said that the process forced them to abandon their customary land in the floodplain and moved to unproductive ecosystems in the highlands.

The formal institutions in the new villages reduced the mobility of the local people and destroyed their traditional ideology of co-operation, which safeguarded the use of the CPRs. It is said that ideological commitments affected co-operation in Rufiji floodplain. The co-operation, which existed before the consolidation of the scattered hamlets reduced gradually as the formal institution took over the entire management of the CPRs in the region.

It is said that the newly state institutions were not able to control the use of CPRs in the floodplain as well as the rest of Tanzania.

The local people said that this process forced many local people instead of supporting the government to push for development agenda turned out to be a political suicide in Tanzania. However, the state tried to mobilise the locals to participant fully in the new development projects in the new villages the ethnic composition and mistrust made every effort to fall apart. It was said that this happened due to lack of collective action and direct participation of the local people in the implementation of the government policies in this case. However, the state was on the steering the informal institutions continued to function at the local level despite officially abolished but remained functioning and made the government efforts to implement its programmes as they lacked local support. The government officials, who were brought to Rufiji floodplain, were mere administrators and hardly listened to the demands of the Rufiji people and this complicated their management as the locals started harvesting the resources without applying the lineages social norms, which formerly regulated them. It is said that the tricks of Nyerere to develop the country were ill placed as he destroyed traditional institutions, which had managed the CPRs in various parts in a fair and sustainable way.

The internal formal organisation of the territorial boundaries gave the head of ministries power to marginalise some ethnic groups, such as the pastoralists where they had no interest to assist. The transfer of the CPRs to the formal government was the last blow for the local communities, which are said to have catered for these resources for decades. However,

Nyerere tried to administer his government in a top-down system the government had difficulties to reach all corners. The government officials at the local level were not able to deliver because of financial problems and the areas especially Rufiji were isolated because of transport and communication problem.

Late in the 1980s when the government was facing economic problems the president decided to reintroduction the colonial British administration system where the local government was to have power to plan and manage all the natural resources. The district was as well to finance all the projects at the district level and the financial resources were to be generated from taxes collected from the selling of licences. After the government realising that it was losing a lot of revenue on administration the concept of decentralisation was reinforced. The government changing the laws to enable the villages to manage their own resources did not take place by surprise but it was an agenda of the World Bank. After the famous economic programme(SAP) had failed to turn the economy of most of the third world countries now the major donor institutions pushed for decentralisation of all state functions to reduce administration and management cost. However, in the land act of 1999 the government of Tanzania agreed to return the common pool resources management to the people, this act is still to be implemented by the Rufiji people.

Access to and tenure on land and natural resources, are most often than not inter-twined and regulated by a defined legal framework as the law separates land tenure from tenure on natural resources. Again, in the past, the colonial and the independent state introduced a systematic dilution of customary tenure to land and natural resources and hence inhibiting access to resources of the majority of Tanzanians who live in rural areas. The state and its public Parastatals controlled natural resources. Until the recent past, there was no devolution on management of natural resources. However, a semblance of devolution existed in the forest sector in which the devolution was up to the highest ladder of the local government structure i.e. the District Council. Villages, which are the lowest community-based administrative units, were or are generally not given tenure on natural resources. It must be stated however, that there is a general realisation on the part of the government that the current deterioration in the state of natural resources in Tanzania is attributed to the state monopoly of the sector characterised by legal inhibitions on community access and tenure to resources. With the socio-economic changes and reforms that the country Under went in the late 1980s and early 1990s, Tanzania reintroduced a decentralisation programme in which the central government retracted from management functions of economic and services sectors (including the natural resources sector). This scenario was coupled by radical changes in natural resources policies.

For example, the National Forest Policy, 1998 and the Wildlife Policy, 1998 do provide for village and community forest reserves and Wildlife Management Areas respectively. These concepts were never enshrined in any government policy document in the past. The government is now seeking to vest tenure on natural resources to the private and non-governmental sectors. Despite the introduced policy reforms postulating community involvement on natural resources management, the legal reforms have been slow and uncertain. Policies are not enforceable as could be with legislation. Hence up to now communities in Tanzania cannot assert their deserved right of access to and tenure on natural resources and that explains the continued rapid deterioration of the natural resources base in the country. We can conclude that the decentralisation process can change the lives of the local people but it has been over taken by events.

4.4 Changing Government Policies

Until recently villages were not mandated to manage natural resources found in their areas of jurisdiction. However, with the new national forest policy, the management responsibilities of forest resources will be delegated from the forest authorities to one or several executive agencies. The policy also provides for designation of village forest reserves to be managed by the communities. "Communities surrounding forest reserves will be empowered to manage and control forest resources around them through the establishment of village forest reserves".

This approach would allow villages to control the rate of environmental depletion despite various institutional constraints encountered. Granted appropriate user rights and security of tenure as incentives for sustainable forest management, local communities are likely to participate actively and effectively in the conservation and management of these forest resources. The Policy further states, "In order to improve forest conservation and management and to ensure equitable sharing of benefits amongst all stakeholders, joint agreements between central government, specialised executive agencies, private sector or local governments, as appropriate in each case, and organised local communities or other organisations of people living adjacent to the forest will be promoted".

A new thinking on community based natural resources management is also reflected under the Wildlife policy, 1998. Prior to the promulgation of the Policy the Wildlife legal regime provided (and still provides) for the management and conservation of wildlife within protected areas, away from local communities. As such, the Wildlife Conservation Act, 1974 had provisions, which created a buffer between the wildlife and local communities. A major reform introduced by the Wildlife policy therefore is through the provision of a strategy

aimed at ensuring that local community members living in wildlife areas participate fully in the wildlife conservation and management. It can be concluded the new system of management to involve the communities around the protected areas is to solve the problems, which the community and the wildlife authority used to have. The inclusion of the local people in the management will create transparency and the locals will benefit directly from the revenues accrued from the commercial hunting and safaris. The long-term difference will be harmonised and the community will take the wild animals as part of their property and protect it.

4.5 Conclusion

The steps which the government took to revamp its economy turned out to be a problem again as the objectives of the new policies were partially achieved but at high Cost.

The SAP policies, which were introduced to reduce poverty in Tanzania added more impacts on the poor majority or widened the gap between the rich and the poor. The retrenchment of the working force in the government societies and other sectors contributed to over fishing, logging, mining, and hunting as all the retrenched masses had to seek alternatives on informal sector in order to support their families. The implementation of the SAP policies affected all sectors in the government, denying the government sufficient funds to support the remaining institutions. However, the SAP policies were meant to uplift the economy and change the livelihood strategies of the local people. It turned out to be a monster because its impacts affected the livelihoods of the locals as well as the economy of the country.

The Structural Adjustment Programme introduced in the 1980s by the IMF to consolidate state expenditure and meet debts of the state lead to major economic changes not only in Rufiji area. The government was forced to start privatisation programmes to reduce the state expenditure whereby working staff were massively reduced but with the same workload. Therefore the state could no longer manage the resources effectively but the notion that resources are free for all Tanzanians remained. Access to CPR under state control was as well getting easy for state officials being in charge of controlling these resources were badly paid and therefore susceptible for corruption. At the same time the closure of co-operatives in the area increased the interest in commercial CPR use as an alternative. As well through the building of new infrastructure (roads, bridges), the area Rufiji becomes an interesting resource area close urban centres such as Dar es Salaam for a lot of Tanzanians wanting to use fish, wildlife, timber, charcoal etc for sale.

All these external developments increased the interest in the commercial use of the resources in Rufiji compared to other regions of Tanzania. However, the state managed to turn the economy through the ERP the local population still remain in the same situation of 1980s. The continued change of events in the country addresses the needs of the powered ones and the problems of the poor majority are not an issue. The concentration of resources in the urban areas has attracted more people from the countryside to immigrate to the urban areas to search for a livelihood. This has affected production in the rural areas and the urban areas have become the dumping areas of labour but not open jobs to be utilised. The changes of the policies affected the ethno professional groups, which had maintained their management culture for decades. The consolidation of these groups in the same ecosystem affected the sustainability of the CPRs, which were overexploited because the demand was higher than the supply. The introduction of the market system in the remote areas like Rufiji turned out to be a problem as many people gave out their agricultural products for money. The food insecurity in the area is related to the locality of the markets, which are closer to the producers. The expansion of the Selous Game Reserve contributes to food problems in the area forcing the villagers closer to this Game reserve to look for alternatives in the CPRs. Last but not least the political set up in the country takes the whole blame on the introduction of the policies, which were biased and did not included all the actors before their implementation and later caused social-economic and political problems.

5 Post Independence Change in Rufiji Area

In the last chapter I have illustrated how Tanzania moved from a colonial political and economic setting to a socialist path affecting the major set up in rural areas by trying to establish a new common Tanzanian identity. This identity was, as shown, in line with an Africanised concept of citizenship and against so called ethnic identities. The project of a united African country with common village structures, a kind of African Socialism, was setting local rulers aside and installed a new uniform village setting open to all Tanzanians. Apart from this Ujamaa had a peculiar socialist development path with the state controlling all the sectors of the economic live, especially also in agricultural production and in the control of natural resources. The boosting up of the state was demanding and could not be followed in a sustainable way because it was too costly and because a lot of economic incentives were lacking. The initially but then more strongly pursued path of liberalisation and privatisation again brought economic growth on paper but nut substantial benefits especially for the rural groups. While only a minority could profit from the gains of the positive side, rural communities seemed to suffer more from losing power to traders and administrators who

would benefit from their position to get their feet into the new political setting. On the other side the losers from this process had to look for alternatives, meaning that unemployed urban people as much as local groups not earning enough with producing coffee, cotton and cashew nuts had to look for alternatives and substituting strategies. One of these can be the use of common pool resources for commercial purposes.

However there are differences in this process for not every area is affected from the same way. While other areas had already a lot of experiences with this change such as the Northwest (Pangani, Kilimanjaro area), which was already heavily involved in coffee and rice agriculture, Rufiji area was for a long time at the outskirts of this change. But this does not mean that Rufiji people were not exposed to it. As I will show, the area is for its remoteness substantially exposed to a very rapid change due to the improvement of main infrastructures and its richness in resources.

The chapter is structured as follows: In the first part the specific way Ujamaa policy in the Rufiji area was implemented is described. This is to be understood in the context of independence and the will for development change as well as a response to natural hazards. In the second section I will show the consequences of the Ujamaa policy on Rufiji agricultural production. In part three then the way the Warufiji were monetarist and its effects (dependence on cash crop production and focus on food crops as cash crops) will be described. Part of this development was then further in the Ujamaa times the forming of co-operatives and controlled price mechanisms by the state. As the Ujamaa policy was dismantled through liberalisation and privatisation programmes, the economic situation was improving regarding trade and overall standards but it also had serious negative effects on the local economy: it opened up for new users of local resources and it made local agricultural production weaker. Specific parts of the local as well as seasonally immigrated resource users and traders can increase their bargaining power in this respect. This links to the second main chapter in which the improvements of access to the area because of infrastructure development will be highlighted. Last but not least the state has since colonial times tried to control wildlife, respectively has forbidden its use for subsistence, especially in Parks. The chapter of the Selous National Park explores how wildlife in the area is conserved and how this affects local livelihood strategies.

5.1 Ujamaa In Rufiji Area

Ironically Tanzania owes the Rufiji area the Ujamaa policy: From the historical point of view Ujamaa came to existence in Rufiji due to impacts from floods and famine, which occurred in

the last century. Right after independence in 1964 a large flood in the Rufiji River Valley caused a serious famine. It was embarrassing for the newly formed government of Tanzania. It was the first time relief food was accepted in areas like, Msomeni and Usimbe from the inner delta (Sandberg 1974a: 9). Six years later there was again a large flood in Rufiji, which caused tremendous destruction of crops and houses in the floodplain, after this second incident the government decided to launch an Ujamaa village campaign to move the population of the floodplain to the higher floodplain banks. This campaign can be viewed as emergency programme but on the other hand a resettlement campaign, in Tanzania in which the principles of creating Ujamaa villages were to be transformed into concrete scheme.

The destruction caused by the flood was not much felt in the inner delta areas, and not at all in the delta itself. The upper and lower parts of the floodplain were the most affected areas. This was the areas the "Operation Rufiji" was directed. The first face was aimed to establish 25 Ujamaa villages on higher ground. The initiative of starting "Operation Rufiji" was under taken soon after the flood, and the message was that villages should be created by relocation in an organised way. The central government had put much pressure on the local government for to relocate people quickly into Ujamaa villages on higher grounds.

It was realised that the general principles of Ujamaa villages and self-reliance would not be easily operationalised in a concrete setting. The implementers were to ask directives and policies, which were delayed for several weeks. There were no constructive ideas how the government was planning to provide social infrastructure and there was no principle dealing with how productive activities in the villages should be organised. At first the message to the villagers looked like this: living in new Ujamaa villages would enable the peasants to survive the next flood, secondly, it would be easier for the government to supply them with food and seeds; thirdly, villages would be able to enjoy access to roads and social infrastructure, like health and education and the last priority was about production and its organisation. The motive of political control was not important in this operation. Instead it was the conjuncture of a natural calamity with the ideology of Ujamaa. To persuade the peasants to move from the fertile valley to the infertile escarpment was extremely difficult. The fertile land of their ancestors was in the valley, where it has been cultivated for generations. The floods were not new to the peasants. Reluctantly the peasants moved to the villages, but at the same time kept their option open to cultivate in the floodplain. The government did not insist that they should stop cultivating in the floodplain. The promises were to locate villages close to river valley edge to minimise walking distance to the fields in the valley. The peasants had no faith in communal farming on the high ground, however, even though some cultivation was initiated.

Tractors were used to clear large areas without realising the danger the officials were causing on this high ground. According to Ben Turok, "the regional officials had obviously never given the Ujamaa policy serious consideration" (Turok 1971: 399). According to Ujamaa policies it was suggested that the villages should be small to maintain a sense of close neighbourhood, but containing sufficient people for the national provision of elementary services. It was clear that the schemes should run along principles of self-reliance and that dependence on the government was to be discouraged. The resettlement scheme was done in hurry without proper consultation. The quality of the soil, vegetation and the availability of water in the new village were poor investigated. The ecological issues like deforestation were hardly considered before the sites were earmarked for new settlements. The government used tractors to uproot the trees and the peasants warned the official the dangers of such activities on ecosystem, which was fragile for setting up permanent settlements. Nyerere thought by putting peasants to live together they would benefit fully the social infrastructure such as school or clinic, another goal for the latter was to see the agriculture production increases subsequently. The technique of Ujamaa was to replace individual farms with a network of village communities in which land should be collectively held and production collectively organized.

To transform the pattern of rural settlement by congregating the rural population with previously had been resident predominantly on dispersed family smallholding in nucleated villages of sufficient size to be efficient units for the delivery of services. Of cause, no one, especially for the peasantry liked to give up their traditional habitat, the resistance of villagers was common, both in terms of to give up the farms and to move. The villagization became even more intense after 1969 (during the period of second Five Year Plan). In two occasions, because the policy was so unpopular that Tanzanian government had to use military force, it happened in the region of Dodoma and Kokuma. According to Lofchie (1988: 153) before the collectivization, merely 5% of rural population lived in villages, but by the end of 1975 Ujamaa policy had forced more than 60% of rural population to live in settled villages. However, the vice president suggested the villages to be small to maintain a sense of close neighbourhood, but must contain sufficient people for the national provision of elementary services. It was clear that the schemes should run along principles of self-reliance and that dependence on the government was to be discouraged.

After different academic researches, the collectivization policy contributed directly to Tanzanian agriculture crisis of 1974-75. For instance, the marked agriculture production in the 1970's differs extraordinarily with the previous decades, thought, the population growth

was about 2.5%, but the 6% growth realized in agriculture sector from 1950's and 60's indicates without doubt that it was increasing. But in contrast, during the 70's different export crops is either decreased or stagnated. Worth, according to Lele (1984:166) during the 1980's export volumes were less than half those of 1970. She argues that if the export volumes had been maintained as the 1970's, the balance of payments crisis clearly would not as this bad.

On the other hand, in my view, if the industrial sectors had performed as great as Julius Nyerere had expected, although the food production decreased, the financial crisis could not happen either. Therefore, the poor economic performance including agriculture and industrial sector was the result of policy implemented by the socialist government.

Impacts of Ujamaa policies on Agricultural production in Rufiji floodplain

Source: Meroka, Patrick 2003

The people of Rufiji floodplain are predominantly agriculturalists. All of the households surveyed reported farming at least one plot in the floodplain. However, there are families who are able to farm more than four acres. The agricultural production system in Rufiji floodplain is based on mixed cultivation using mainly labour-intensive and traditional technology. Little input are used in the process, as only a minority of the wealthier farmers can afford the costs of labour hire; similarly chemical pesticides or fertilisers are both expensive and difficult to obtain.

Floodplain cultivation takes place in two main seasons, the main flood season (Mvuli) and the dry season (Mlau). Observations of these seasons and their relationships to the floods have been analysed by several researchers (Telford 1929; Jack 1957; Sandberg 1973; and 1974a;

Yoshida 1974; and Bantje 1980a). There seem to be agreement that in both seasons cultivation is dependent upon the floods, their timing, peak and duration but in different ways.

The cropping cycle follows the rainfall pattern for the area with the main growing season for both upland and lowland crops covering the period from late February/early March to July/August. This is followed by a second planting of upland maize in October timed to coincide with the short rains of November/ December (Swahili: Vuli) which is then harvested in late January. In recent years the increasing variability in the timing and amount of the short rains for the area has caused reduced Vuli crop yields and a concomitant extension and intensification of the December/January hungry season.

The principle food crops grown in the area are rice, maize and sorghum, although these days the latter crop is used mainly for the brewing of local beer rather than as food per se. There are a few farmers who trade in rice, maize and sorghum staple crops on a commercial scale for the Ikwiriri market, but the majority of the inhabitants sell part of these food crops locally in the village to supplement the household expenditure or to finance the cultural festivals and private leisure. A variety of vegetables and tree crops are also grown for mixed purposes of subsistence and trade.

The traditional system of land use in Rufiji floodplain featured hazard adaptations strategies aiming at giving secure crop returns under the prevailing conditions of an erratic flooding regime. The intensity and extent of the flood varies considerably from year to year, and the probability of a flood severe enough to endanger crops and human life is one in every five years. However, such a flood is also responsible for replenishing the nutrients in the soil, as well as the soil moisture. The flooding regime therefore acts as both an advantage and a hazard to floodplain economic activities and Rufiji people. The system is based on inter-planting and rotating rice, cotton, and maize in such a way as to minimise the hazards of the flooding regime. The maize crop is planted in November and December, when the river is beginning to rise. Rice, the main subsistence as well as cash crop today is planted in January and February, often inter-planted with the maize.

In March before the floods reaches the full intensity the maize is harvested, followed by the rice harvesting in June. As the floods begin to recede in May, the cotton is planted, and harvested in October. If the floods peak comes early or particularly severe, the maize and rice crops may be destroyed completely. In this, case a second maize crop can be planted in May and harvested in September. The high fertility of the floodplain soils in terms of both nutrients and moisture means that at least two crops a year can be obtained from the same field.

Potential yields achievable under optimal flooding conditions are high, but average yields are much lower. Yields variation is considerable both from year to year and from place to place. On the whole, the eastern sector of the floodplain (downstream) has higher yields than the western part, as the flooding is less severe in the east since some of the water has already been spread over the floodplain upstream.

The Ujamaa villagisation process then disrupted part of this system. In the Rufiji district it was carried out in response to specific environmental hazards. Traditionally, the Rufiji lived in scattered homesteads in the floodplain and depended on the annual flooding of the Rufiji River to provide silt and water for rice cultivation. However, the floods, which made agriculture, flourish also caused destruction of homes and fields from year to year. It was decided, therefore, to shift the population to the higher northern banks, into villages. Two major problems resulted from this relocation of the population.

Most villagers could not continue to farm on the floodplain because of the increased distance. Secondly, cultivation on the floodplain was discouraged because it was feared that many villagers would want to go back to their former homes. The new environment on the higher ground is very different from the one the Rufiji were familiar with. The vegetation is different, the rains erratic, and the soils less fertile. The crops, which could be grown, such as cassava, were not popular and wet rice cultivation was not possible in the new settlements. What was required was a gradual change from the old agricultural system practised in the floodplain, which was eco-specific.

This change did not happen because of the rush to resettle the population in the shortest possible time before the next floods. The result has been a slow process of adjustment in which famine relief has had to be provided where agricultural production collapsed. The supply of relief food is a political strategy of the ruling party to control support from the rural people. However, the citizens are entitled to receive relief food the state uses it to achieve a political mileage in the rural areas, where 75 % of the population reside.

Other reasons for the bad performance of agriculture in Ujamaa villages were that it changed traditional ownership. In spite of co-operatives being formed and in spite of subsidies being paid for fertiliser and seeds because the way Ujamaa tried to install collective land use was not appropriate because incentives were lacking on the household level. Collective land use was a response to the traditional ownership on an individual basis, which but suffered from loss due to wild animals feeding on fields. During Ujamaa alternative, “block” farming (bega Kwa bega) has been suggested in the region but few people have adopted the system.

Adjacent individual plots would be farmed, to enable the farmers protect their crops easily against the wild animals through rotation shifts, which will minimise the monitoring costs. The individual system is costly, as household members have to keep watch day and night alone. Many households have lost everything within hours; either the member of the family came later or failed to turn up to protect the crops. This would be more efficient in terms of time and be a gradual move towards the level of co-operation necessary in an Ujamaa system, if the floodplain farmers accept the system for their own benefit.

This system has been already tried in floodplain parcels close to Ikwiriri area and proved successful. The system of (bega Kwa bega) has been accepted in some regions in Rufiji floodplain but still there is opposition in some areas. The local conception on witchcraft in relation to agriculture has hindered the system to be implemented fully. The local people belief that witches can hold the crops through their natural powers and some said these witches can send wild pigs or locusts to one's farm to destroy what is considered to be of economic value. The witches prefer to see all people are poor and own nothing but are jealousy to see a neighbour with high yields in his farm as compared to his or her. It is not only on agricultural crops this problem is experience by on education too. The time invested in production is higher than what a household obtains from farming at the end of the season. In case the labour force was hired many of the households would have stopped farming many years ago.

Government was desperately trying to reach the scattered population with famine relief during a period of extended drought and floods. Rufiji region has a long history of droughts and famine; hence, villagisation was seen as a panacea to deal with these problems. With the settlement of populations into villages, bore holes were drilled to provide water for both man and animals. New drought resistant food crops such as millet, cassava and banana varieties were introduced with considerable success. However, over the last two decades, prolonged periods of drought and heavy floods have affected this region, and due to a lack of manpower and funds, basic services have not been maintained.

Agricultural production as a result, was on a steady decline. In addition, the population density has increased by 50 per cent over the last two decades. Changes in the traditional pattern of activities have brought about environmental stress. When a dense settlement is introduced into a fragile environment, pressure is brought to bear on local vegetation. Regeneration of this vegetation was easy when settlement was dispersed and fluid but

repeated use of land by people who are no longer mobile requires a change in agricultural practices.

Another factor, which has limited the capability of villagisation to cope with environmental hazards and raise agricultural production, is the failure by the local population to adapt to different agricultural practices in the new environment. The case of the resettlement experience in Rufiji district, which have been described in detail by Sandberg (1974), illustrates this: The Ujamaa villages on the higher areas are set on sandy soils. These soils are dry the whole year and can hardly support traditional crops, which the Rufiji people used to cultivate in their tradition lands in the floodplain before relocation took place. Access to land was a complicated issue during villagisation.

In Tanzania, it has been suggested that villagisation might have accentuated land shortage because some villages were badly situated in areas where there was little usable land and large concentrations of population led to reduction in average lot size (De Vries and Fortmann: 1979). Social stratification related to land was another result of villagisation. If a family's land is close to the village, they are privileged. Those less fortunate may walk two hours a day to reach the farming parcels. This means that the belts around the village are over farmed, and the land further out is not effectively used. In some areas, people with land at great distances became day labourers for those with more accessible land.

The traditional system of co-operation (Kiwili) in production, which existed in prior Villagisation process, was no longer recognised in the new Ujamaa villages. The hamlets consolidation meant the breakdown of the lineage labour sharing leading to the decline in production contributing to food insecurity as many of the lineage members were spread all over and the organisation become a problem.

During focus group interviews about the effectiveness of Ujamaa agricultural schemes participants from Mbunju Muvleni and Mtanza/Msona reported that seasonal food shortage is an important problem of agricultural production in Rufiji floodplain since Ujamaa because the fields in the floodplain were too far away. There have also in the traditional system been hungry seasons. This period of stress, known locally by the Swahili word for hunger “njaa” occurs as the food stored from the previous harvest begins to run low before the crops planted during the short rains are ready for harvest from November onwards to March. However this levelled the hungry period to certain extend.

Although climatic factors play a role in determining the duration and intensity of the hungry season, today there is much variation in the extent to which it is felt at the level of the

household economy. Because of lack of fields in different areas there is for some of the poorer households a clear time of hungry. In village wealth ranking one of the main criteria for distinguishing food user's households was that they are the ones who do not have food security. The usual coping strategy for households under those conditions is to look for casual labour in exchange for either food or cash to buy food. Such labour is readily available as the most intense period of hunger coincides with the peak labour demands for the preparation and planting of the fields before the long rains starts.

For wealthier households the hungry season can be merely a time of limited income and careful budgeting. It was said in the focus group discussions food shortages affects individual households at different levels and each household reacts differently towards it. This supports this interpretation of the variable impacts of the hungry season. All the households that reported having suffered a shortfall of food during the hungry season were from the lowest wealth categories.

An important outcome of the problem of seasonal hunger, aside from the direct hardships of hunger and illness that it entails for individual households, is that it reinforces the unequal wealth distribution of the floodplain communities. Poorer households that rely on off-farm labour for their subsistence during the hungry season are then often late in the preparation and planting of their own fields, and end up getting lower yields. By the time of the next hungry season the household food supplies are again critically low, and the cycle is perpetuated. The focus group discussions indicated that poorer households in the village engage in continuous extraction of the natural resources from the community land to supplement their low agricultural produce.

These households are totally dependent on the common pool resources for their livelihood as compared to the few wealthier households in the area. The poorer the households are try to uplift their standard of living through continues extraction of the common pool resources, without taking into consideration the impacts caused by them on the resource through their rational behaviours.

Another area of concern was not only less subsistence agricultural returns but also fewer yields of cash crops such as cashew nuts. The cashew nut authority's purchases fell from 140,000 tons in 1973 to 44,000 tons in 1978/79, a decline partly associated with villagisation because peasants were moved far from their trees (Havnevik 1993: 49). This has also got to do with the fact that the farmers in Rufiji were moved from the fertile soils in the floodplain

to areas with poor soils or water supplies or where the ecological conditions were unfamiliar to them and many households suffered a downturn in production.

Another aspect was the co-operative agricultural system, which was introduced into the area to provide peasants in Rufiji floodplain with farming inputs. But the state's input delivery system, associated with villagisation, affected agricultural production in the region and many households were not able to keep up with the system and suffered a lot from bad delivery and poor storage of inputs, which reduced the efficiency of the measures taken, and some inputs such as seeds and fertiliser were wrong or even harmful for the different agro-economic zones in the country.

Nyerere's "Socialism and Rural Development" did not give directions as to how to deal with the most problematic issues related to the transition, such as the land conflicts caused by villagisation (Havnevik 1993: 201). Many people were settled on land belonging to other villagers and were uncertain of future claims to the land. New conflicts developed over claims to uncultivated lands that were under cultivation prior to villagisation (Swantz 1996). The commoditisation of village land in Tanzania was one of the many unintended consequences of villagisation resulting from the disruption of the land tenure system (Swantz 1996: 147). At the time of villagisation, the selling of land was rare, but it became common practice from mid-1970s. Treatment of land rights varied a lot throughout the country, depending on the strength of pre-existing claims to land ownership (Swantz 1996: 148).

The newly settlements created competition in common pool resource use and demand of land in some villages increased as new-comers came in and all the fertile land was already used up. The overpopulation reduced the size of farms, which were overproduced leading to soil erosion and the decline of the yields was experienced in many of the Ujamaa villages in Rufiji District of the coast region as well as other parts in Tanzania, where the government extension officers hardly visited. The new techniques in farming were short lived as the government failed to provide the farming facilities as it promised at the beginning. Agricultural production suffered manpower shortages as many of the young people shifted to the cities to search for new jobs. The elderly people, who remained behind were or are not able to cultivate large fields as it happened before, when the households were compact. Lack of farming facilities especially in Rufiji floodplain is considered to be a major problem in agricultural production, however, there are other problems related to production.

Villagisation had environmental consequences as a result of the concentration of dwellings, people and livestock in a limited space. Before villagisation period, rural population in Rufiji

floodplain lived in a scattered manner because the resources in these regions were spread all over and the access to them was linked to ethnic cultural beliefs and traditional professionalism in resource exploitation. If you put them together, there will be no possibility of regeneration of the resources said one writer. Generally, villagisation made soil fertility an immediate problem (Coulson 1982). Planners neglected both the soil and the water aspects in the region. Ecological issues like deforestation was hardly considered (Havnevik 1993: 220). The concentration of settlement and cultivated land led to a change to more permanent or annual cropping of the same fields, which eliminated the previous system of natural regeneration and caused lower yields (Kjærby 1986).

The locals who were displaced in the villagisation process in the 1970s have claimed links between villagisation and land degradation in various regions, where the Ujamaa villages were set up. These claims are supported with the recent studies in other parts in Tanzania revealing the claims. Lindberg (1996) who studied Mamire and Mutuka in northern Tanzania to look for linkages between household poverty, land degradation, and social structure confirmed the links of villagisation and land degradation in the two villages.

After villagisation, land degradation appeared on a large scale in the area for the first time. Land was intensively used, and the new ploughing techniques increased the risk of soil erosion. The declining soil fertility in the fields became a topic of discussion among the farmers. The same applies in Rufiji where this study was done: In both villages soil erosion is said to be a problem and crops like maize hardly can reach one meter high. The soil texture is not compact anymore because on the highlands the soils are not replenished naturally like the soils in the former settlement in the floodplain floor.

Taking the household income into consideration the peasant farmers in the Ujamaa villages are not able to benefit from the natural improvements of the soils, which their food production relied on. Today the state inputs are not forthcoming as the responsible institutions have been closed down as the government lacks resources to maintain and keep them functioning. The promises and guarantees, which were given to the local people, have turned against the successful government regimes and none of them as improved the situation of food production in this region. Lack of farming inputs and specialisation in food species, which can adapt to the type of soil in the Ujamaa villages the local peasant farmers dreams to have a better harvest is a farfetched dream as the drought resistant food crops are lacking as well as fertilisers.

5.2 Commercialisation of agriculture and the role of cash crops

In Rufiji the colonial government forced the locals to join the market economy through the introduction of cash crop plantations in the region. The colonisers hut tax levy, forced adult men to exchange their labour for money to pay for the Hut tax, which was made compulsory by colonial administrators. The travelling of the locals from the rural areas to the urban was made difficult through the hut tax. The local chief was to give the villagers permission to travel after clearing their farms and had paid all the Hut Tax. The papers were checked at strategic control points manned by the police and whoever was caught without valid documents was arrested on the spot.

This requirement changed both the settlement patterns and the economy, as people moved to stay together to avoid hut tax. The system of production changed in the post-independence period. The independent government encouraged the local people to grow cash crops such as cashew nut and cotton to earn foreign exchange making people even more dependent from this income. The production of cash crops reduced the former acreage of subsistence food production. The households in the floodplain were forced to buy again food from other regions to supplement the little produced in the small units left for subsistence production and still the practice continued today.

The granaries, which were the symbol of hard working at the village level, disappeared and the little food obtained was kept on top of the living room ceiling. But the conservation of the grains is affected because the house ceilings are warm and the boil weevils reduce the grains to powder within a short period forcing the locals to start buying maize from the market before the next harvesting season begins.

The produce from agricultural production was sold through government-backed co-operative societies, which supplied the locals with subsidies. By the 1970s, the co-operatives were scarcely functioning anymore and people tended to export their nuts direct to Dar es Salaam, where they fetched a good price in the market because they were used for cooking. This continued into the 1980s when the economy began to be liberalised and cooking oil to be imported, leading to a decline in demand from city-dwellers for cashew nuts. By the time of my visit in 2002, people on Rufiji floodplain were complaining that the costs of transport of nuts to Dar es Salaam by lorry, plus the costs of the levy (ushuru), had made profits very small, with a concomitant decrease in cash income and many villagers preferred to give their produce to middle men buying it at the village level.

By 2003, the profits on the export of the cashew nuts to Dar es Salaam had shrunk still further, and many people did not bother to send the nuts to Dar es Salaam market. Even the big farms in the floodplain had ceased to be profitable, and were weed-infested. The cashew nuts trees can be seen all over in Rufiji floodplain and now make part of the artificial forest in the floodplain The farmers used to gain profits when the co-operatives functioned but now through the privatisation and liberalisation of the Markets small scale farmers have lost millions of shillings through black markets.

Rich middlemen who work with some well-connected individuals in the government to exploit the open markets control these black Markets. The middlemen traders control the prices through their bargaining powers and the support of the business partners in the government. The government official price for cashew nuts is not used by the middle men and many of the farmers have problems to understand how cashew nut price decline at the local markets while the same fetch good price in the national and international markets.

The records of the cash nuts price over the last three years, when this research was done reflected continued fluctuating of the prices, and indeed, on one occasion, some villagers said that they were grubbing up their trees because no money could be made and are planning to start planting groundnuts instead of cashew nuts but the market for this new crop was not predictable. Currently the villagers have no single staple cash crop; however, the climatic conditions in the region can support many types of crops. The best example is cotton, which does very well in this region but has lost the market as the local ginneries have closed down. It was noticed a few farmers continue growing cotton in small parcels hoping one day the market will come back. There are thousands of kilograms of cotton in Rufiji floodplain kept in various households lacking sustainable market.

The cotton ginneries are closed as the workers were retrenched and the entire production halted. The villagers complain of cheap clothes in the market coming from the west have killed their main source of Income (agriculture) in the floodplain as well as other parts of the country and now the villagers have remained with no alternative to generate cash other than to exploit the common pool resources for survival. The problem of food insecurity in many households in the region is directly connected to market failure of cash crops and change in relative price. The formerly subsistence crops such as rice and maize are now having double role as cash crops as the markets of the main cash crops such as cotton and cash nuts have weakened or totally collapsed in the last years.

Liberalisation of the markets where the government no longer fixes both agricultural and livestock products prices has also created suffering and conflicts within households and between different groups due to lack of reliable and just market. Men have been forced to leave the cash crops market, which they had controlled for many years and are now growing food crops like sweet potatoes and other legumes for sell to earn some cash. This has pushed the women from small-scale business, which they used to control and now becoming economically dependent on their husbands remittances. The change of economical activities at the household level in the recent years is connected to household demands and change in relative prices of consumables and much of the agricultural produce ends up in the market for selling to meet the cost of traditional ceremonies well as manufactured goods such as clothes, bicycles, radios, which locally carry social status.

The industrial goods prices continue to increase while the agricultural products prices continued to decrease forcing the farmers to double selling the harvest in order to meet the costs of these goods, which have reached the remote markets of Rufiji. It was said in the last two decades the changes in relative prices of the basic household goods have forced many of the households to live below the poverty line. The cash crops such as cashew nuts, coconuts and bananas are particularly valued on account of their potential as perennial sources of supplementary income benefits.

Cotton used to be the cash crop for the area, but this ended with the failure of the state-run cotton growers co-operative in 1989 with debts outstanding to many local farmers. It was said from 1994 onwards farmers in Rufiji floodplain started growing sesame as a potential cash crop in the region. However, the farmers are dependent on selling their produce to outside private buyers who come to the villages and so at times have been adversely affected by fluctuations in the prices offered. There is yet, no cash crop to replace cotton as a reliable source of income in Rufiji floodplain claimed the local peasant farmers.

The Rufiji people feel there are few alternatives left in farming as a livelihood strategy but there is much fear the floodplain people will be left with nothing to generate cash as even the black markets are doomed to fail. The area has no tradition of livestock keeping (Oral History information; Young & Fosbrooke 1960) and even today very few of the households reported keeping any livestock other than chickens. The Rufiji people hold their traditions and still see animal rearing as a burden for the family members and will interfere with the farming activities. However, some villagers are willing to start keeping animals but the initiative has not been taken seriously.

"The locals said keeping livestock is encouraging the wild animals like leopards to come closer to the homesteads to attack the people. The traditions of the Rufiji people do not support rearing of livestock cattle and that is why most people are reluctant to accept livestock because of fear from the animal spirit".

The decline of agricultural production in the floodplain farms has forced many of the household heads to diversify their livelihood strategies for survival reasons in the recent days. The introduction of cash crop in the region reduced the size of farms as the available land for food production was converted to growing of cash crops. The intensification of food production on small units fails short of the food demand in the households. The conversion of food crop garden (shambas) into cash-crops fields reduced the yearly production of staple food in the region and many households started experiencing food shortage and increase of the prices for the same. But the instability of cash crops price in the national and international markets has left the floodplain people to fight with their poverty and many of the households have quit from market producing strategies and are trying to come into terms with the problems they are facing in line with food insecurity and cash economy.

It was said the increasing population in Rufiji floodplain has increased the demand of staple food crops and now more new fields are being opened but the changes of the rain patterns in the last 10 years and the prolonged droughts have stretched the local's budgets as many are unable to plant again after the first crop fail. It was said the many of the household can't manage to buy sowing seeds and have to lie on the government subsidies, which in most cases reach them too late and hardly to receive them as the process involve bureaucracy and is too corrupt. However, the government agenda to development was through agricultural production, but did not last long as the prices of cash crops products kept changing and the government was not able to keep its working force because it budgeted on the foreign loans, which terminated to come as the political regimes in the donor countries policies changed. The villagers found that cash crops took much labour that might otherwise been available for food-crop production and have lost value in the region since the breakdown of the co-operatives. The problems facing cash-crops production in the area today is population pressure, which has forced many households to re-convert their parcels of land from cash-crops to food crops again as the market prices of these crops have failed to pick up since 1980s.

The villagers prefer to have food security than to continue growing cash crops, which have contributed to food shortage in the region. The traditional food crop cycle of production and the lengthy of fallow carted for the sustainability of the soil texture, however, the method seem primitive to the modern farming techniques and is blamed for the shortage of food in

this region. It was said the cost of traditional production was minimised and the selection of the seeds to be sown gave the villagers a guarantee in food security as the timing and quality was taken into consideration. It was said the seeds were resistant to erratic conditions and matured quickly before the floods or the dry period started. The consolidation of the hamlets reduced and increased pressure on the available agricultural land and limited the possibility of the people to move to new farming parcels as it was in the pre-Ujamaa time.

The transformation of subsistence agriculture in Rufiji floodplain is the major contributing factor to the problems facing the CPRs in the region today. It can be concluded that the Rufiji people having undergone social-economic and political changes and are doing everything to rescue their families from food shortages today.

5.3 Change from Ujamaa to Liberalisation

As we have seen in the last chapters Ujamaa policy was introduced to turn around development in the rural areas. But the policy received critics from economist as the government was investing a lot of capital in the Ujamaa schemes, which turned out to be a liability to the state's budget. Failure of positive results from the Ujamaa policies the international organisation especially World Bank in collaboration with the Tanzania government made drastic changes in all government Parastatals and the rural communities suffered more as the state stopped supporting the co-operative societies in the region and this affected the main economic sectors such as agriculture.

The idea of trade liberalisation and privatisation was to remove barriers that have been bearing on the free performance of markets and to privatise state Parastatals. Such trade barriers include tariffs, taxes and subsidies. Liberalised trade introduced market competition on raw material and finished products. Locally produced product could not withstand market competition against the products from the industrialised countries basically due to inferior quality of final products. The heavily subsidised public processing industries could not match competition due to inefficiency. Therefore, the expected improvement in efficiency and international trade competitiveness could not be achieved. Over, the longer-term, however, trade liberalisation is likely to have a positive effect provided certain conditions such as management roles are put in place. Moreover, the success of such approach presupposes the existence of a good system of resources management.

The measure of reducing government expenditure was intended to reduce budget deficit, a chronic characteristic of the Tanzanian economy. In order to achieve the intended goal a number of measures were introduced. The new policies were to restructure the government

enterprises, eliminate subsidies and cut the government expenditure on heavily subsidised public Parastatals. The economic recovery programme (ERP) was introduced to down size the manpower in these Parastatals and in the process the government was to cut down loans and other expenses related to the management of these Parastatals. The economical approach was successful as the government expenditure reduced but the retrenched masses were left jobless. Many of these non-performing government institutions and Parastatals were either closed or sold.

From August 1993 to September 2001 about 300 Parastatals have been privatised to local and foreign investors. The Tanzania government through privatisation and liberalisation become the darling of the western donors and the financial institutions such as World Bank and IMF pumped millions of dollars to Tanzania to support the ongoing restructuring of the state institutions.

The measure has had dual drastic impacts on the development of agricultural sector and natural resources. First it reduced the financial capacity of the agricultural sectors and the management of these sectors become ineffective due to lack of manpower and financial support from the government as many co-operatives were forced to close down.

During the pre-reform period, the agriculture sector, like other sectors, operated under massive state intervention and controls. The major principles for socialism and self-reliance as stated in the 1967 Arusha Declaration dominated the various efforts to develop agriculture. Agricultural production, organisation, credit provision, distribution of inputs and supply of social services were all state- led and controlled.

The overall result was the poor performance of the sector, which was reflected in persistent food shortages, increased food imports and declining production and exports of cash crops, particularly during the mid 1970s to mid 1980s. The rural infrastructure also deteriorated significantly during the 1980s. The reforms since 1986, among other things, saw a collapse and restructuring of Parastatals large-scale farms. This resulted in a decline in agricultural wage employment but a rise in the number of small-scale farmers, as some of the closed large-scale farms were divided up.

Peasant farmer who depended on subsidies farm inputs were compelled to encroach the forest in order to expand farmlands to meet the rising demand of cash and food as a consequence of price increase in staple food and farming inputs become expensive for the small scale farmers. The encroachment of the forest or opening new areas was due to family expansion and population growth in the rural areas due to urban-rural migration. The restructuring policies

failed to address the effects of the retrenched population, as there were no alternatives given to support their livelihood.

The liberalisation affected the exchange rates of the local currency, the Tanzania shilling was done in order that the demand and supply of foreign currency be efficiently allocated through market forces rather than being rationed by the government. The immediate impact of the measure was massive devaluation of the shilling against major currencies such as US Dollar. According to economic principles of international trade, devaluation encourages production of export products as they become price-competitive due to cheapness in the world market. To be sure agricultural products could be produced with largest portion of inputs valued at domestic prices. Hence there is minimal input of imported raw materials that invariably become expensive with devaluation. Despite the perceived opportunity, the forest and agricultural sector could not benefit due to weak and inefficient processing capacity. Moreover, the positive effects of increased market opportunities could not be realised due to absence of frontal system of managing the agricultural resources.

With liberalisation, private traders took over much of the roles of the co-operatives. This brought major changes. For example, even if the price of insecticides relative to cotton has decreased, it is still perceived as more expensive, compared to the situation where they were not properly charged. Many traders do not even distribute inputs, since they have made hand cultivators their major target group. Hand cultivators seldom have the means to buy inputs; hence, they do not see the need of linking such services to their crop transactions. The end result is, thus, increasing incentives not to use inputs, and possibly also a decreasing availability of them.

When peasants were asked about their views on liberalisation, it is thus not surprising that the least positive sentiments are the produce is sold at any time as the markets are spread all over. The negative impacts are the peasant's face some new constraints regarding access to input such as pesticides and fertilisers.

Since liberalisation, the increase of land value has attracted the urban elite, who are moving to the rural areas for investment. The financial capability of these people have affected the market value of land and today only the elite are able to own land. The government is not able to provide the social amenities to the low class people, despite the strategies of the (ERP) but the high-class people control such services. The privatisation policies have increased the living cost in the country, as many of the private companies are profit oriented. The government services, which used to be, provide for free, are today under the control of

powerful local individuals or foreigners and access to them is through payment. The cost sharing especially in the health sector has denied the poor local population services, which the government provided prior the reform period. Many people in the rural areas die, as the majority are unable to pay sharing costs for medication. It seems that privatisation policies were meant for the urban population, as many of the private companies are found in the urban areas.

Despite the positive consequences from overall trade in Tanzania and economic growth the livelihoods of local people were seriously affected. They lost inputs and help from the government, which was little enough and did not cover the damages from the change of the traditional system to the Ujamaa schemes. But on the other hand there were fixed prices and a minimum level of inputs provided. These were now not being given anymore. The inflation increase hit the poor people the hardest who cannot afford agricultural inputs. Therefore the gap of poverty continued to increase as the rural population income reduced with time. The can be seen through the household expenditures in the study villages. The basic necessities are hardly affordable because their prices are higher than the income per household.

The agricultural sector, which used to be the central source of income in this region, has been affected and the local people cultivate less than one acre as distance and protecting of the wild animals in the fields is too expensive. As quoted in chapter four, the peasant farmers have exposed to middle men, who pay in advance before the harvesting. The food harvested from these small parcels almost half end up in the market. The Traders are the ones profiting from this development: Since the break down of the co-operatives society peasants in the rural areas are unable to access the regional markets as the locally produced crops are fetched by the middlemen direct from the producer homes. These have more bargaining power due to more capital and more information on the daily demand and supply of the same. Lack of information of the market prices denies the local peasants the fair prices for their goods.

The local public schools in the rural areas after privatisation failed to compete with private schools and the performance of these public schools continued to decline, as many children dropped out. Many of the schools in the rural areas and some parts in the cities lacked essential facilities for learning such as textbooks. The enrolment of children in rural primary schools declined as many parents were not able financially to support their children's education. The problem is still valid in the rural areas and now many children have joined the labour force at the early age. The problems facing the common pool resources in the rural areas such as Rufiji floodplain are directly connected to the continued school drop outs and

the influx of urban traders interested in the common pool resources. The increase in Common pool resources extraction has doubled in the last fifteen years. The young generation are looking for a livelihood as well as being under pressure from their parents to contribute to the household economy, which is facing hardships due to cash shortage.

Before liberalisation the State controlled food crops such as maize and rice and other cereals price and the weak peasant in the rural areas was protected and at that time there was a market to sell the goods. Apart from the introduction of the market based paradigm, other factors that fuelled liberalisation were the escalation of the costs of marketing boards due to pan-territorial pricing, inefficiencies and corruption and the growing role of the parallel, unofficial and illegal marketing system (Maliyamkono and Bagachwa, 1990, Gibbon et al., 1993, Kheralla et al, 2000, Ponte, 2002).

Food marketing reforms included the removal of subsidies, price liberalisation, quantity and geographical restrictions on trade and the opening of domestic trade and processing to the. Marketing boards have in general lost their marketing function, with information dissemination and some regulatory functions.

Devaluation of currency has led to higher costs for imported input goods, higher prices on imported food and potentially higher domestic food prices. At the same time, trade regimes have opened significantly through reduced tariff levels and removed import barriers. However, the reforms in the food crop sector did not lead to a general increase in real producer prices.

The main beneficiaries of market liberalisation of food crops have been the consumers, since the real prices of grain and grain meals have declined since the inception of the reforms. The private sector responded rapidly to dominate both trading and processing of food crops, leading to high levels of competition and increased efficiency in these activities. This has led to a downward pressure on profit margins that have counteracted the negative effects of elimination of consumption subsidies.

The emergence of private actors in trading has however led to difficulties in overcoming high transportation and transaction costs. In order to circumvent the high transaction costs for obtaining market information in rural areas many traders tend to rely on social, ethnic-based networks. Moreover, these traders often act outside formal regulation and many of them have difficulties in accessing financial services. A positive result of reforms in food markets is a reduction in marketing margins, that is, the spread between producer and consumer prices. This is primarily due to a reduction in consumer prices. Furthermore, markets have moved

towards being more integrated, which implies that prices are transmitted from one market to another more efficiently.

Food market liberalisation had important impacts on the regional pattern and composition of food production. For instance in Tanzania, the more remote areas such as Lindi, Mtwara, and Rufiji had during the pre-liberalisation period provided the major share of maize for the main urban markets. With liberalisation these areas lost their share of the national grain market to the benefit of areas closer to Dar es Salaam or which had better transport infrastructure (World Bank, 1994).

What followed with liberalisation as well was a reduction of co-operative crop buying. For instance in two rural districts in Tanzania (Singida and Morogoro), the share of private traders' crop buying increased rapidly between 1986/87 and 1994/95 whereas co-operative crop purchases went down drastically. In Morogoro district, co-operatives had disappeared from crop buying altogether by the mid- 1990s, whereas in the more remote area Songea, its share of total crop purchases had declined from about 75 to 44 per cent between 1986/87 and 1994/95 (Ponte,2002).

Liberalisation has, through the spread of markets, led to increased commercialisation of rural life. But at the same time liberalisation has also meant higher school fees, health care fees, increased prices of agricultural inputs and in general a more expensive lifestyle. This in turn has impacted on the composition of crops grown in various areas. The trend has in some places been from cultivation of "slow crops" to "fast crops", crops that have a short growing time and can be harvested several times a year, and from high input crops to low input crops. This was a response to the pressure to generate cash incomes to meet increased expenses. The shifts of crops were not necessarily adapted to the agro-ecological environment and nutritional needs, but to their ability to earn short-term cash (Ponte, 2002).

While food markets were largely liberalised in the 1980s, substantial reforms in the export crop sector only emerged in the 1990s. The background was that governments had a much higher degree of control over export crop marketing than over food crop marketing. Public revenue from price taxation of agricultural exports has been an important source of government funding, which means that reluctance to reforms have been substantial in many places. After independence this taxation was one of the few sources available for governments to finance national budgets. Furthermore, since export crops typically are more dependent on credits and purchased inputs than food crops, Tanzania government has been sceptical of the ability of the private sector to provide for the distribution of these inputs.

Input distribution through the free market is the most common situation in Sub- Saharan Africa following liberalisation (Shepherd and Farolfi, 1999). Such a situation leaves input distribution to market forces and in some cases it can also involve measures and incentives for private traders to enter the area of input supply. However, recent tendencies towards renewed state involvement have been detected (Cooksey, 2003 and Jayne et al, 2003).

During the 1990s agriculture was earning Tanzania less amounts of foreign exchange due to continuing deterioration in the terms of trade of the most important export crops, i.e. coffee, cotton, tea and sisal. Diversification of the livelihood strategies, which many people in the floodplain thought to be a solution to the problems facing the household budgets and food supply at the village level, has left many households in the black spot economically and still many have to cope with liberalisation and privatisation programmes. The villagers have not been able to capture the new market niches like in countries in the north associated with changing consumption patterns. This is mainly due to weak institutions in the sense that the capacity to live up to technical requirements and standards and to build proper infrastructures has been too weak. To the extent non-traditional exporters have been able to benefit from increasing external demand; these operations tend to be controlled by foreign owned companies or by non-African minorities.

This trend towards liberalisation has a clear effect on household strategies in the two villages studied: On Rufiji floodplain, there is relatively little regular waged employment available. In Mbunju/Mvuleni village, for example, the only people earning regular salaries are teachers and government officials. There is sometimes labouring work (*kibarua*) available: clearing a field, felling trees for timber, loading logs to tracks, building or repairing a house.

However, the phrase '*Hatuna kazi yeyote hapa'* (we don't have any work at all here) is frequently heard from the villagers particularly the youths. People say that they would like more employment opportunities because they need more cash for their basic needs. The local villagers especially men, who are locally considered as breadwinners can be observed sharing ideas and discussing on crucial issues affecting their income but lack long term initiatives how to overcome the problems. When asked on their future plans many feel the only possibility is to exploit the CPRs because the government has forgotten them. We can conclude the new policies in the area after Ujamaa are not better than the former. The locals feel that livelihoods have been affected after the government introduced privatisation and liberalisation, which are blamed for the total erosion of what Ujamaa left for the inhabitants.

The social cohesion in the time of Ujamaa has been transformed and now everybody is concentrated on personal issues and collective action is far from reality.

5.4 Impacts of liberalisation on the villages studied

The Ujamaa policies, however, to have been replaced with the new policies in the 1980s still the impacts caused to the Rufiji people can be witnessed today. The local people have failed to capture again the food security, which used to exist in the floodplain before the introduction of this state policy in the two study villages in Rufiji floodplain.

During the field study it was witnessed that most people in these two villages purchase food from distance places, which they could have grow or obtained in the local village kiosks but, which is available in Ikwiriri town. In Mbunju/Mvuleni village, for example, one-shop is operating today, selling mainly foodstuffs such as rice, maize flour, wheat flour, sugar, and tea leaves. However, the area used to be famous for rice cultivation this foodstuff is today obtained in the kiosks. During the interview on household budget and items prices in local village stores everyone in the village complained about the increase of prices on purchased food and other basic household items. The local resident said, given the drop in the prices of cashew nuts and cotton, they had less cash than before with, which to purchase these food and other household facilities. The change of relative prices on the goods produced locally and the manufactured items in the local markets in the recent years have affected the household budget in this village and many of the households members are trapped in an economic dilemma.

The local people said the increase of manufactured goods prices and decline of agricultural product prices is seen locally as indicator of livelihood diversification. The decline of Agricultural production in the floodplain had little effect on the demand of industrial goods as the villagers especially the youths have turned to common pool resources to finance their needs. The continued demand of manufactured goods today at the household level has affected the source of income in these villages, forcing many of the households to send one of the family members to urban areas or to look for a livelihood strategy in order to remit some money for household budget and traditional ceremonies. The table below illustrates the range of staple food, which are available at the local markets and the range of prices per item, which the consumers have to pay in the two study villages and the regional Township of Ikwiriri.

Table 4: Food prices in the two villages and Ikwiriri town

Items	Price (Mbunju/Mvuleni)	Price (Mtanza/Mtanza)	Price (Ikwiriri)
Rice (Mchele)	TSH.450-500	TSH.400-470	TSH.400-420
Wheat flour (unga ngano)	TSH.350-500	TSH. 400-550	TSH. 350-450
Beans (Maharage)	TSH 350-450	TSH.450-500	TSH.350-400
Sugar (sukari)	TSH. 500-600	TSH.550-600	TSH.450-500
Maize flour (Sembe)	TSH. 450-500	TSH. 450-500	TSH. 400-450
Match box	TSH.100-150	TSH.120-170	TSH.80-100
Kerosene	TSH.300-450 per 300ML. retail price	TSH.350-500 per 300ML. retail price	TSH.500-650 per litre. retail price

Source: Meroka, Patrick 2004

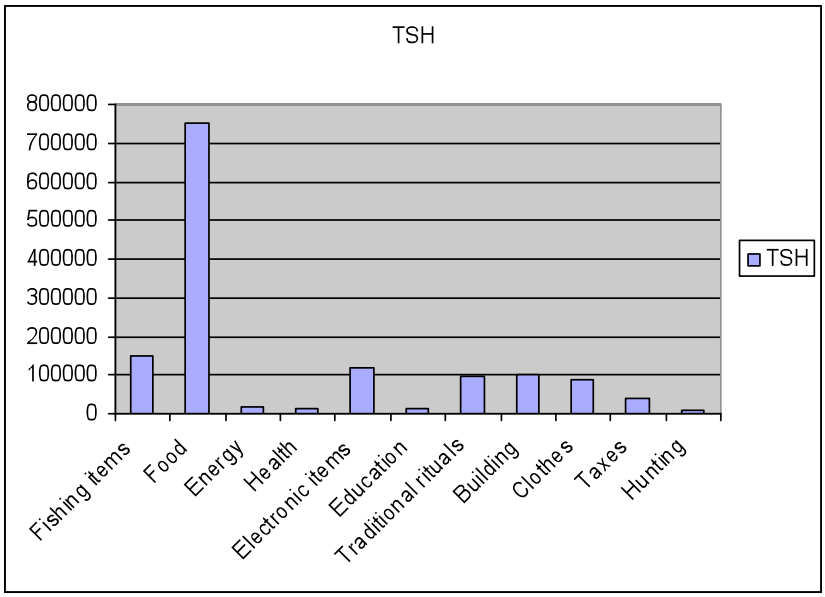
In addition to the above items, the people in Mbunju/Mvuleni could purchase vegetables (potatoes, sweet potatoes, onions, cabbage, tomatoes, spinach, and carrots) and fruit (oranges, lemons, mangoes, papaya, watermelon) in the village market as these items are locally grown but hardly available in the village market as their prices were higher in the neighbouring town (Ikwiriri) forcing the producers to go for better prices. The prices of the staple food in the table above are not constant but they keep changing depending on the demand and supply and most important the season. The prices of the staple foods such as rice and maize fall in the harvesting season and two months later the prices double in the kiosks as the same products are not available in the villager's stores any more. The price of 2 kilograms maize grains in Mbunju/Mvuleni cost TSH 350 during the harvesting season but two months later one kilogram of maize flour cost between 450-500 Tanzanian shillings on retail price. The retail traders make double profits while the same farmers have to buy again from these retail traders at a high price. Many of the villagers have attendance of selling their agricultural products before real harvesting season starts. The rich urban middlemen through their agents residing in Ikwiriri town do give some money in advance to the villagers for their crops while still in the farms. Once the harvest is done those households, which received money in advance have to give the grains at the agreed old price when the down payments was done.

The problems facing staples in Rufiji floodplain is the establishment of markets closer to the villages as well as opening and connecting the area to the urban markets. The poor infrastructure and distance from the main stores contributes to price increase of staple foods especially in the interior areas like Mtanza/Msona. The retail prices of staples are higher in

Mtanza/Msona than in Mbunju/Mvuleni and Ikwiriri. The distance and the location of the markets affects the prices as transport cost as well as the profits are added to the consumer's price. The retail prices of manufactured goods and staple foods have been liberalised by the state and the storekeepers have been changing prices now and then without the approval of the government. The affected are the consumers but the main source of income of the local people remain unstable as the prices of economic activities such as agriculture in the floodplain as well as other regions in Tanzania keep fluctuating.

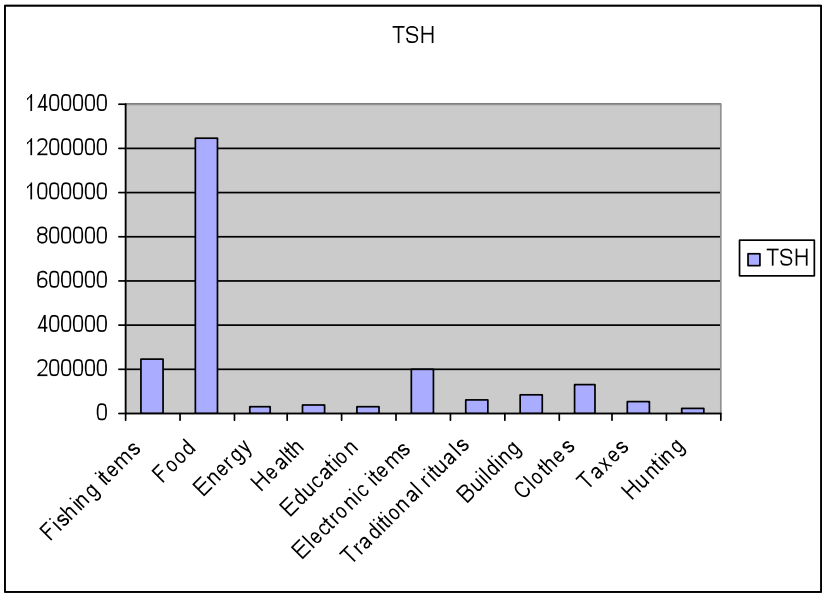
Prior to the liberalisation of the economy, the Rufiji people produced enough rice, which they consumed and the surplus was exchanged for goods, which were not available in the household such as sugar, soap and salt. However, it used to occur shortages of food the prices were reasonable and many of the households managed to purchase it as well as other goods, which were considered necessary in the household. Before liberalisation and privatisation took place the government protected the consumers against the producers through price control, which today is not the case. Today the difference is, much of the rice the locally consumed staple food in Rufiji floodplain is imported from various parts of Asia. Local people find it hard to understand how rice brought from far away can be cheaper than rice grown in their own region.

Figure 5: Mbunju/Mvuleni village Budget per year



Source: Meroka, Patrick 2004

Figure 6: Mtanza/Msona budget per year



Source: Meroka, Patrick 2004

We therefore find a household budget structure of the two villages studied. In spite of bad prices people sell staple food products that become cash crops, which have no stable markets today. Due to demand for cash on the local level people still rely on transforming food crops in the start to the marketing season. Often due to cheap imports and oversupply on the market the prices are low and people finish off their yields quickly. These yields are low also because people do not put much effort into agriculture: this is the case because in the second part of the year they rely heavily on CPRs for sale such as fish, timber and in one area also wildlife (game meat). The latter is because of its illegal nature not stated openly by local people. There is another difference between poor and richer households: Poorer households, especially female headed households have much less access to the CPR's which give higher income such as fish and timber/charcoal. They rely on gathering items such as firewood, traditional medicine (and Ukidu) but for which they do not gain enough. In terms of modern items and money expenditure there are major differences between the two villages: Mbunju/Mvuleni is in this sense "more" developed, has therefore a higher expenditure standard than Mtanza/ Msona. But in the latter the demands are also less because they are further off from market centres and towns. But regarding food security the latter village seems to be better off than the one closer to the centre. There are less traders coming to the remote area and there are also less foreign users coming from town than in Mbunju /Muvleni. Another difference is that Mtanza /Msona lies close the Selous Game Reserve.

People especially in Mtanza/Msona have changed their food habits due to this process, which makes them more dependents on imports of food, which they consider to be of lower quality and therefore low nutritional standard. Local people do link this with lower local production as the following interview statements illustrate: An informant from Mbunju Muvleni stated to the question how people work in the fields in the following way:

People today don't have enough strength because they don't eat as well as they used to do in the past. The food they eat today comes from all over the places, some of it seem to be good but the quality is low as compared to the home grown Mbunga (rice). The villagers eat this rice when there is no alternative to rescue themselves from hunger otherwise the villagers prefer to eat their home grown rice despite of the cost as compared to this foreign rice.

Q: So is the food which is grown here better?

Yes, first of all its heavy (kizito), the other kind of food is Very light (chepesi). A person has to fill the stomach, but these days' people don't feel satisfied and keep eating but our rice one plate is enough for a grown up person. Today even children consume like grownups. A family of five people needs three kilos of this foreign rice per a meal, which is twice as much as one would have used the local rice.

As in pre-independence times food production was linked to ritual activities in the context of respect of the ancestral spirits especially old people find it hard to accept the foreign food. These are not good for ritual activities and therefore for elderly people not suitable as an informant from the same village states. They also link the disturbance with the foreign food as a reason for decline in production:

The imported food has its problems. It is like medicine you shouldn't use it after its due date (has expired). Nonetheless, poverty obliges many people to buy and consume such food. Many people complain of the stomach upsets after consuming foreign rice. The old people have a problem to adapt to such type of food as they feel colonised again through the supply of foreign food. The foreign grains are not suitable for traditional rituals and that is why the elderly villagers find it difficult to change their eating habits fearing to annoy the ancestral spirits.

Q. Consuming foreign rice does it affect your production?

The culture in this village is difficult from where this type of rice come from. We perform rituals to protect our production but the foreign rice is produced under mechanical means. The closeness to the crop one has good relationship to it and that is why consuming rice from local

farmers is purely produce through human energy and is not contaminated with chemicals. Our ancestral spirits like traditional but not foreign rice and mixing the two is like abusing the production spirits.

5.5 Conclusion regarding impact on CPRs

It can be concluded that the problems facing the CPRs in Rufiji floodplain are connected to the transformation of traditional agriculture, which used to give food security in the area. As already explained traditional agriculture was altered by villagisation process and resettlement in the 1960s. The state policy aimed to modernise the traditional agriculture and this was to take place through villagisation program. The formation of Ujamaa schemes was the implementation of the Ujamaa policies, which were embedded in the Arusha declaration of 1967. The food security, which the Rufiji people enjoyed before resettlement disappeared and most of the households experienced food shortage for the first time in their history. The food shortage was caused because the newly settlement soils were less sandy and it was not suitable for agricultural production. These soils fertility was exhausted quickly as the villagers intensified their agricultural activities. Furthermore the new areas were not ideal for wet rice growing because of lack of sufficient water. The Rufiji people had to travel hours to the floodplain after the higher lands became unproductive to due to overcrowding. The little produce the farmers obtained from the floodplain was consumed in the household and some was sold in the market for cash to cover the household expenditure. The food, which was formerly consumed in the household, became a market commodity as the cash crops were abandoned during the relocation period. The money obtained from the selling of the food crops cannot sustain the demands of the local people. The area is saturated with imported goods, which are cheaper but poor quality. These goods are competing with the local goods, which the locals have turned too because of the financial problems. Now the local people go for CPRs as they fetch them more cash than the agricultural crops. The youths especially have turned to CPRs has they earn money every day as compared to farming where they have to wait for three to five months before seeing a coin in their pockets. The CPRs business has turned to be lucrative in the floodplain, as most households prefer exploiting the CPRs instead of engaging themselves in farming. The Rufiji people say the CPR business one has a guarantee to bring a kilo of maize flour for the family. The households headed by men are said to be involved in CPRs business especially in the hunger period when most people spend one to two days without seeing a meal on the table. This issue is considered to be an enemy of education in the region forcing school children to join the working force at the early age to feed themselves and some are said to play a vital role in the households. Today the CPRs in

Rufiji floodplain are undergoing privatisation and liberalisation experiment the external traders have captured the young men into their business and now farming is considered to be women's business. The control of the markets by the middle men and their agents have kept away the local producers from important information and that is why the Rufiji people have to sell their agricultural crops at the low price. The encroachment of the traders into the villages especially Mbunju/Mvuleni, the locals find it hard to resist taking the money from these people before the harvest starts and when the season starts most households have not surplus any more after paying back the debts. This behaviour of the local villagers has contributed to the dependence of CPRs as rescues once the households are in need of cash or food. For the Rufiji people the CPRs play an important role in the cash economy as well as the food sector.

5.6 Infrastructure

Attempts have been made to change the ecological system of Rufiji floodplain under the notion of development and modernisation of the area. The government of Tanzania and donor communities have made several surveys in the region to unearth the potentials for irrigated agriculture combined with absolute flood control and hydro-power production as well as natural gas production (songas). The Rufiji floodplain is a very attractive tropical agricultural area, and rich villagers in Rufiji, foreign food companies and national industrial and political leaders will be interested in acquiring individual property rights in this area in the near future. The new bridge has also "opened up" the vast area of the floodplain south of the river for non-subsistence agricultural development. The opening of the bridge in 2003 has increased the marketing possibilities for all crops and fisheries from the whole of the floodplain. In addition, the rapid growth and closeness of the capital Dar es Salaam (from 0.7 million in 1974 to 3.5 million in 2002) is an enormous impetuous for accelerated commercialisation of agriculture and common pool resources in the Rufiji floodplain. The area is gradually experiencing resource use competition because the newcomers are commercial but not subsistence oriented. The urban resource extractors have modern facilities especially for storage, which enables them to extract more resources at once to meet the demands of the urban markets.

The Segeni irrigation scheme in Mbunju/Mvuleni is one of the recent projects the Tanzanian government in collaboration with the Iranian government introduced in the floodplain. This project has changed the social-economic structure in Mbunju/Mvuleni village. The village land was transferred to outsiders without any compensation to the villagers. Initially, the government promised to hand over the scheme to the Mbunju/Mvuleni people, but now, the

project is under the management of the outsiders. People from Ikwiriri Township and some village officials from Mbunju/Mvuleni are the main stakeholders in this scheme. The first cases of land purchases in the floodplain have occurred, but are more likely to happen in the near future. The gradual urbanisation of villages, especially Ikwiriri, now a town of 40,000 inhabitants, has increased the value of good floodplain land and common pool resources, such as fisheries thus, altering the strategic options of the villagers in the floodplain.

5.7 Seasonal Immigration

The Rufiji floodplain has been experiencing seasonal immigration for decades. However the area is considered to be remote the rich pockets of resources makes it attractive to the external resource user especially urban regions. There history of immigration goes back to the colonial administration. The Germans and the British government encouraged internal migration to exploit the potentials, which were available in Rufiji district. It is said that the Rufiji people were not interested to work with the colonisers and that is why the external labour was required from other districts. The immigrates mainly worked in the factories and cash crop plantations, which were owned by the colonial government The seasonal immigration is also related to the introduction of the hut tax by the German government. This tax was a burden to the Rufiji people as well as other Tanzanian. It can be said it disrupted the social cohesion in the region. The introduction of the money economy pushed more people to look for jobs elsewhere to support their families. Rufiji district is known as a source of labour force for urban regions like Dar es Salaam. After independence the internal structure of the country made the seasonal immigration more practical than in the colonial era. The government of Nyerere overhauled the entire system of administration and that lead to new demarcation of the area. The old boundaries were no longer valid and most people were forced to relocate to other regions, which were under populated to extract the natural resources as a sign of development.

The new system of government in Tanzania abolished the traditional system of administration and tribal groups were mixed to form a united state. This is where the problems started as many ethnic groups were pushed out of their ancestral land to pave way for the government to set up new villages. The process scattered people all over the country and the majority are now pushing back to get access to the CPRs, which they used to harvest before the villagisation process.

The seasonal immigration is the strategy applied by the resource users to access these valuable commercial products. The opening of the area and giving power to the citizens to

access the resources has made their management difficult. The Seasonal immigrates some get access to the resources through licences issued by the district council. These seasonal immigrates have problems with the local people because their interests are commercial while the local want to use the resource for subsistence. We can conclude that the seasonal immigration has made the management difficult because the external resource users have no interest to conserve the resource but have to enrich their pockets.

5.8 National Parks

The traditional approach of conservation during the colonial- and post-independent era in Tanzania is to exclude local communities from protected areas without taking into account the interactions that had existed between people and wildlife.

The mandate to carry out wildlife management activities, including problem animal control and anti-poaching, is vested entirely in the Government. Given the vast size of protected areas that must be administered, the Government has not been effective in fulfilling its conservation role. Important protected areas are threatened by encroaching farming while some key wildlife species are declining to extinction levels due to imprudent use and shrinkage of habitats.

The Selous Game Reserve ecosystem has a long history of fluctuation in human occupancy caused by natural and human disturbances characteristic of the region in the past and right up to the larger half of the present century. Examples are: Slave trade in the middle ages, invasion of the war like Wangoni and Wabena in the last century, the Maji Maji rebellion against the German colonial government in 1905-07, the movements of the First World War forces in the Selous area, the tsetse fly-borne sleeping sickness epidemic since 1936, and the Ujamaa (villagisation) policy following independence. Under German rule, the first protected area in the present Game Reserve was created in 1905. The reserve was located in the southern part of the Selous.

By 1912 the Germans had increased the number of reserves in the area to four. In 1922 the British colonial government joined these reserves together and the resulting area was named the “Selous Game Reserve” in memory of Captain Frederick Courtney Selous, an early naturalist, hunter and author. The aim of creating the reserve was to protect the large elephant population.

After Tanzania's independence the final adjustment to the reserve's boundaries was made to protect the migratory elephants which were apparently on the increase. The state curved more

land from the neighbouring villages to accommodate the animals but the villagers lost control and ownership. The state policies restricted entry of the villagers to the area Game Reserve and any economical activities was highly forbidden.

As already mentioned most rural areas of Tanzania, farming of food and cash crops is a major occupation for the majority of the people. The yields, however, barely suffice their basic requirement. For instance, meat protein among the rural communities surrounding the SGR is in especially high demand because livestock keeping hardly is possible due to the prevalence of the tsetse fly transmitted disease (trypanosomiasis). It is also not a tradition of the people in these areas to keep livestock, particularly cattle. However, before villagisation small animals such as sheep and goats were kept, which declined in number as the climatic conditions on the highlands were not favourable and lack of sufficient pasture and water in the newly Ujamaa settlements. After losing the domestic animals most households changed their eating behaviour and game meat become an alternative.

Since the colonial times (both German and British), villagers had little or no legal access to game meat because they could not comply with the restrictive legal hunting regulations, which barred them from using traditional hunting methods such as bow and arrows, and at the same time imposed unaffordable hunting fees. These restrictive regulations forced the communities adjacent to SGR to violate the law in order to survive.

These communities are not only denied benefits from wildlife resources, but faced infrastructure disadvantaged as well. This is manifested by the poor access roads, non-availability of clean and safe drinking water, and inferior educational and health amenities. Matters are made worse as rural communities suffer from crop damages and dangerous wild animals causing threats and death to people.

It is estimated that more than a quarter of the food crops produced in the area are destroyed by wild animals, and an average of ten people are killed by wild animals annually. In spite of these calamities the law does not provide for compensation for the damages inflicted. This state of affairs led to antagonism towards the reserve and conflicts between wildlife authorities and villagers, which resulted in toleration of poaching by the villagers. Consequently commercial poaching increased in the 1980s to the extent that it endangered the further existence of the reserve.

The situation changed from 1988-1989 onwards when the Government solved the problem in the short run by deployment of crack-down forces that effectively brought poaching under

control. The international community was approached for assistance in initiating programmes to conserve the country's wildlife resources.

Before the implementation of the programmes, the administration of wildlife was a top-down monolithic responsibility of the Wildlife Division. The rural communities that co-exist with the wildlife were legally excluded from its management, though in practical terms they continued to utilise it illegally. It was realised that an effective protection of the entire ecosystem carried out single-handedly by central government law enforcement would have meant unbearable costs as well as fighting a losing battle.

Poaching in Selous Game Reserve involved a chain of people ranging from businessmen and some public and law enforcement officials, with the villagers playing the primary role of actual killing of the animals. It was further observed that the fate of wildlife conservation in those areas was determined by the villagers, and in order to maintain protected areas successfully, the local communities must be involved in conservation activities.

5.9 Major Conclusions and Institutional Change in CPR Management

The Rufiji people had established institutions governing CPRs in pre-independence times, which was changed by colonial and post-independence rule, especially by the socialist Ujamaa-policy of villagisation. Today, under structural adjustment programmes (SAP) and the restructuring of the state towards more privatisation of state services, different people are involved in the CPR-management. The post-independent period affected the CPR management in Rufiji floodplain more than the colonial times. The institutional changes, which took place between 1970s to the present day, have affected the primary livelihood strategies of the Rufiji people leading to intensive encroachment on CPRs for a livelihood.

The introduction of the Ujamaa policies in Tanzania as well as Rufiji changed the social-economic and political structure of the Rufiji people. The dismantling and resettlement of the Rufiji people on the highlands affected their production and the people started experiencing food shortages. The relocation of the people from their ancestral lands in the floodplain contributed to the disruption of traditional means of production, which were well adapted to the floodplain ecology. The agricultural impacts due to dislocation were off-loaded on the CPRs as the locals started extracting more CPRs for the market to earn them cash to buy food. The food deficient in most of the households in the floodplain is said to have forced the Rufiji people to invest more time on CPRs exploitation instead of putting more energy on agricultural production. It is said that the Rufiji people had no interest any more to work because of fear to be dislocated again.

The out-migration of household labour from Rufiji contributed to the decline in agricultural production. The breakdown of the cooperatives and the removal of the subsidies by the government contributed to lower yields because the farmer's failure to make use of the early rains as they were important for sowing seeds. The delay of farming facilities due to lack of cash many households reduced the acreages and that means less production. The expansion of the Selous Game Reserve affected production in the Rufiji as the south floodplain was nationalised by the state to accommodate the wild animals. However, the Rufiji people tried to resist the occupancy of their agricultural land the state used its power and pulled them out without any compensation. This became a problem of the Rufiji people as now the animals were closer to their small farms, in the new villages. The agricultural crops are destroyed regularly and some families gave up cultivating large areas as before.

The impacts from wildlife on the agricultural production were resolved to more CPRs including illegal poaching, over fishing and logging. We can say that the problems facing agricultural production are solved through intensification on CPRs extraction as the markets for these products are promising and stable. The change of political regimes and the opening of the area through improvement in infrastructure, which has attracted commercial, immigrate such as fishermen, hunters and traders to the area. Last but not least the introduction of privatisation and liberalisation in the last years the Rufiji floodplain as become the source of market products for regional, national and cross-border.

6 Fishing in Rufiji floodplain

During the first part of my research in 2002, my stay in Mtanza/Msona village close to Selous Game reserve coincided with a peculiar example of collective action. The area is exposed to outside fishermen although they are not as numerous as in the other village closer to the commercial centre. Nevertheless, commercial fishing is an issue in the village as well as the loss in catches, which is attributed not only to more fishermen but also to fishing ritual violations. So local people called for an urgent meeting during my stay in order to discuss how the depletion of the fish stocks in Lake Mtanza could be stopped. Not everybody attended the meeting but a group was formed that wanted to reintroduce a traditional breeding technique called Misakasaka (Brush Park). The technique Misakasaka is a kind of a lump of brushes set in the water of the lake to protect the selected curved part of the lake from encouragement by the fishers. The branches were pinned in a way, which allowed fish to move in but not out again. The branches used for this so-called brush park were carefully

selected on the basis of durability, non-toxicity and abundance. It is essential that the brush parks remain in place undisturbed for at least four months.

This allows the fish to settle into the parks and to reproduce and grow there, thus contributing to the lake's restocking of fish in general. The branches mainly protected the fish eggs from strong waves, birds as well as fishermen. The branches made access to the areas difficult for the fishermen and the flying birds were not able to catch fish as easily as in open waters. In pre-ujamaa times this method was a common part of the traditional institutions and it was used by fishing groups as a means of conservation in most of the floodplain lakes. The local fishermen were only allowed to catch sizeable and healthy fish from the protected area after the breeding and closing season was over. The opening of the area was accompanied by traditional ritual, which the local specialist had to perform.

The new group adopted the name Misakasaka referring the old system, which was locally used for fish conservation in the floodplain lakes. The collective action took place as the villagers were looking for a means to address the problem over fishing in the lake, which contributed to a shortage of fish in the local markets. The problem of over fishing was discussed at the village meeting and the village government agreed to support any group willing to conserve part of the lake for the benefit of the local people. The Misakasaka group enjoyed the political protection from the village government and started preparation to protect part of Lake Mtanza in order to enable fisheries to breed without interference from local or outsiders' fishermen for the benefit of the community. However, it was clear for all the members that they would gain as a group and also as individuals[21].

This case illustrates several aspects of the Rufiji fisheries today: It shows that local people are aware of the problem of over fishing, despite that there are also other interpretations, as we will see. But the major issue here is that despite the remoteness of this village, fishing has become a serious issue in the village as people experienced a decline in catches, which affected their subsistence. The important question is: Why did the local people manage to act collectively and revitalise a traditional technique accompanied with institutions in order to protect the stock for future gain. While in other areas of the floodplain people fail to act

[21] The Misakasaka group was established to protect the vegetables(fish) for household use. However, the initial agenda was to enable sufficient supply for subsistance use the market demand was the main driving force. Since the break down of the cash crops markets the fisheries took the central role in the household budget. More than 80 % of the households in this village get their protein supply from fish.

collectively but people in Mtanza/Msona, starting with a small group, succeeded in crafting a new setting based on old knowledge.

In order to understand this process I will give an overview of the fisheries and its changes in the Rufiji area in the next chapters, before I come to the analysis of the findings of my research on fisheries management as a CPR in the two villages. After outlining the ecological basis, the traditional fishing techniques and the cycle will be explained as well as the rules and regulations connected to fishing and linked to the local worldview of the Makonde fishing ethno-professional group. After this, I will explain the major changes from the pre- ujamaa and the post-ujamaa times. These changes are mainly linked to the fact that the state took over control of the fisheries. As financial means are lacking, the state government leaves an open ground for newcomers to move in, especially after the liberalisation and privatisation process. After these changes it is important to see how they have affected the villages on the local level. The following chapters will show that there are major differences between the two villages, stemming from their location and distance to commercial centre. The reason why one village setting was able to act collectively while the other was not will be analysed.

6.1 Ecological setting of the Fisheries in the Rufiji Floodplain

Understanding the ecological requirements of different fish species is fundamental to the management of fisheries, especially those in irregular and chaotic systems like floodplains where continuous restocking to maintain large catches depends on irregular flooding.

The early development of fish is a very complex period during which individuals undergo many morphological and physiological changes. Many of these developmental changes are associated with a transition from one ecologically distinct organism to another.

The fish species found in the Rufiji show a wide range of animals adapted to different habitats and water quality. White waters and clear waters can mainly distinguish the main bodies of water. However, waters mix and mingle; creating areas where the composition is neither one thing nor the other, and the seasonal floods bring both runoff waters and other environmental changes. Some of the fishes are hardy, and can be found in more or less any body of water that they have been able to reach. Others are more specific in their requirements, and are restricted to a particular area or habitat; many of these are hindered from achieving a wider distribution by changes in water chemistry and are unable to swim through to reach other waters.

Because of seasonal variation in rainfall in the coast region of Tanzania, the Rufiji River of the Rufiji Basin shows considerable variation in the rates of flow. When flow rates are low the rivers remain within its permanent banks, so during periods of high flows the river burst its banks and floods the 14500 km^2 square kilometres of the floodplain. This seasonal alternation of wet and dry season is one of the most important factors determining fish distribution, behaviour and diversity within the floodplain. It results in marked changes in habitat availability and suitability. Variation within the annual flood cycle alters both the amount and duration of habitat availability. Throughout the floodplain most temporary pools or ponds have beds at one to two metres and would be expected to be dry once the floods recede. In the recent years the fish of the floodplains have been experiencing changes in their habitat. The change of the rainfall pattern in the floodplain due to climatic changes and the floods has reduced extremely, which have affected the fish production in the floodplain lakes. The changes of habitat conditions have led to the decline of some species in the lakes.

The Rufiji River and floodplain lakes support over 40 species of freshwater fishes, most of which are adapted to spend at least part of their life cycle in a floodplain environment, and breed seasonally after migrating from the main river into areas inundated by the rising flood (Hopson, 1997). It is however, dominated by the most common species, notably the cichlids of the tilapia group including various Oreochromis (‘Kumba’ and ‘Perege’), Citharinus congicus (‘Pele’) and the African Catfish Clarias gariepinus (‘Kambale’), the Sardine-like Alestes (‘Ngacha, ‘Beme’), Lobeo spp. (Ngocho) and Bagrus spp. (catfish, ‘Mbufu’). Most freshwater fishing takes place in the numerous permanent lakes of the floodplain. Within the floodplain, fishing occurs all year round but with a strong seasonal change in effort corresponding to periods of flooding. The annual flooding provides vital breeding habitats for fish whose populations are replenished in most years.

The high productivity of fish in the floodplain lakes include the healthy hydrological functioning of the Rufiji river system and the protected areas upstream in the Selous Game Reserve that provide a continuous supply of fish and nutrients to the floodplain lakes in the flooding season. The fisheries are categorised into different species and their mode of reproduction is grouped according to the fish family. There are six methods of reproducing in fisheries.

Egg Scatters

Fish which breed in this way either spawn in pairs or in-groups. Males and females release milt and eggs into the water at the same time. These are mixed together and the eggs are

fertilised. The fertilised eggs float away in the current or sink to the bottom, where they lie with the substrate. There is no parental care given, so large amounts of eggs are produced. The Characins and Cyprinids are two of the species that lay their eggs this way.

Nest Builders

Many fish species build nest in one form or another, whether it is a simple pit dug into the gravel or the elaborate bubble nest. No special breeding set-up is needed; when ready to spawn, the fish construct a nest by blowing bubbles, often using vegetation to anchor the nest. The male will keep the nest intact and keep a close eye on the eggs. The female should be removed after spawning. Care is needed to raise the fry and the tank should have a glass cover to help keep the nest moist and warm. The Gouramis, Anabantids and some catfish are the most common of this type of spawners.

Egg depositors

In this case, the eggs are either laid on a flat surface, like a stone or plant leaf or even individually placed among fine leaf plants like Java moss. The parents usually form pairs and guard the eggs and fry from all danger. The Cichlids are the best known species for this. Some Catfish and Rainbow-fish are also Egg depositors. The set-up for these fish will vary with the species, but usually you have to provide a flat stone, broadleaf plant, cave or a broken flowerpot. Sometimes you can remove the item that the eggs have been laid on to a separate hatching tank.

Mouth breeders

The females usually lay their eggs on a flat surface where they are then fertilised by the male. After fertilisation the female picks up the eggs and incubates them in her mouth. Even after hatching the fry will return to the safety of their mother's mouth if danger is near. Brood numbers are usually small, since by the time the fry are released they are well formed and losses are minimal. The best-known mouth breeders are the African lake Cichlids.

Egg buriers

The annual Killifish are known for this method of reproduction. As the pools where they live dry out, the fish spawn, pressing their eggs into the substrate. The pools dry out completely and the adults die, but the eggs remain in the dried mud. When the rains return and the pool refills, the eggs hatch and the cycle is repeated. Killifish eggs can stay viable for many years in the dried out mud.

Live bearers

The live bearers do not lay eggs at all, they are fertilised internally and carried to term inside the mother's body. The broods are small and the fry are well developed when born. The Guppy swordtail and Platy are the best known members of this group.

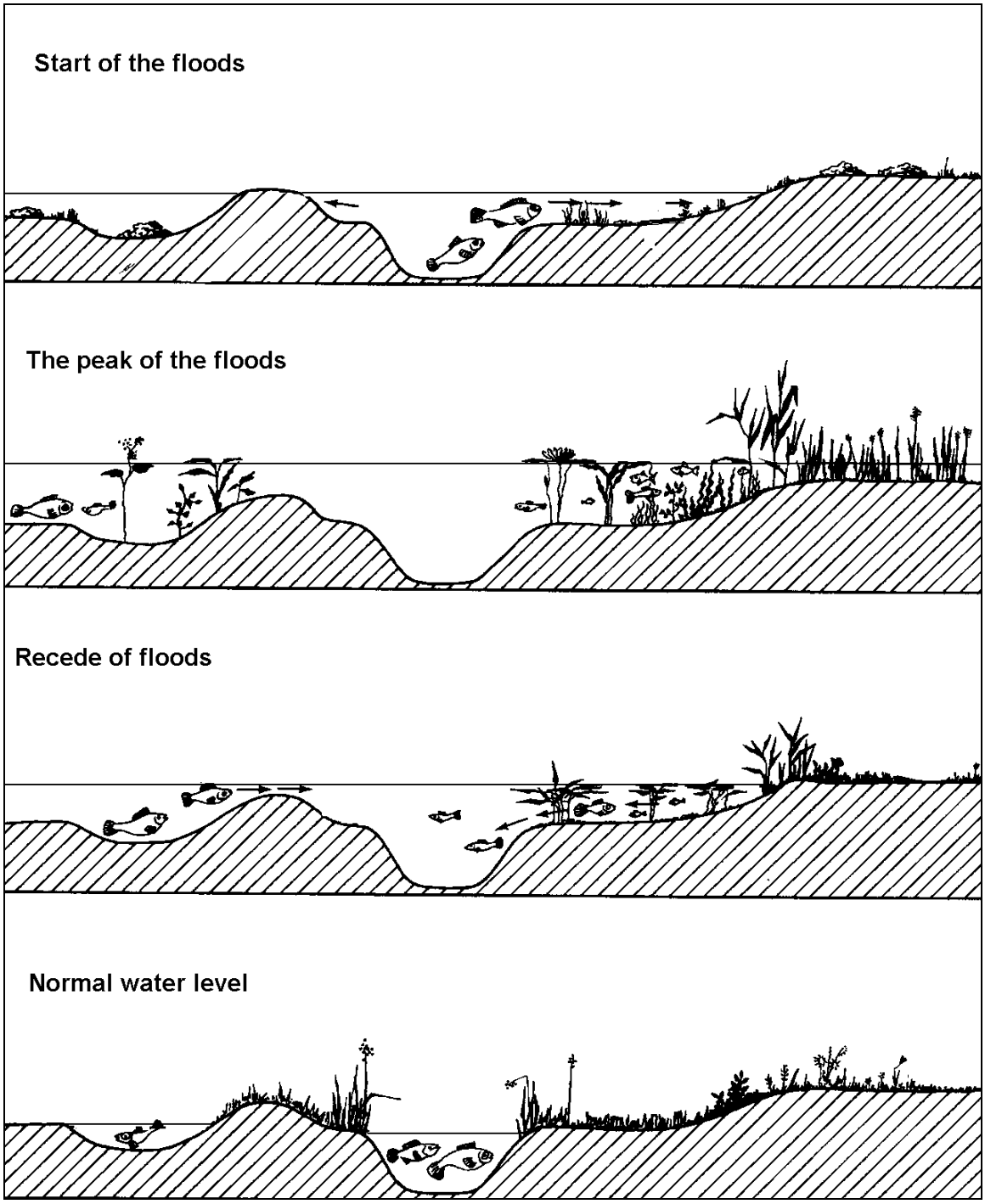
Many species of fish undertake migration on a regular basis, on a time scale ranging from a few metres to hundreds of kilometres. The purpose usually relates to either feeding or breeding. In the spawning period the fish change habitats for the protection of the eggs and later the young fish. The change of habitats enables the eggs to hatch without disturbance from the fishermen or predators. The adult fish take care of the young fish and train them on how to find food by themselves and avoiding predation in the process. The adult fish swim back to the shallow waters leaving their young fish alone to adapt themselves to the new environment. The tricks of survival have to be applied by the young fish in the new environment.

The early post-hatching period is when fish are at their most vulnerable, with high mortality occurring naturally in the first few weeks after the hatch. Many factors contribute to this mortality, e.g. predation, food availability, wash out etc. Many species overcome this problem by laying many thousands of eggs to ensure adequate recruitment and in the late spring or early summer; thousands of these fry can be seen swarming in the shallow margins of most rivers and lakes. The presence of young fish is also an indicator of the spawning success of the adult population which often require specialised habitats.

The ability to identify these early stages is of great importance when managing fisheries and is of critical importance when making any decisions regarding the management of rare and endangered species.

Seasonal fish migration

Figure 7: The movement of fisheries in four seasons



Source: Meroka, Patrick 2005

6.2 Traditional Fishing Institutions

The main features of pre-independence fishery institutions were set up by the fishery groups in Rufiji, mainly the Makonde, Pogoro and Nyanza. They regulated the fisheries in many of the Rufiji lakes. The traditional institutional setting included membership to a fishery group,

knowledge of specific techniques adapted to seasonality and cycles as well as rules and regulations often in connection with specific rituals. Conducting such rituals was based on the animist religion of these groups and their knowledge as well as worldview of how fish is available because of the will of a hierarchy of spiritual beings to be respected.

Fishing depends on the flooding periods, which influence access to the resource. Best catches are recorded earlier in the western part of the floodplain than further east. The peak season in catches in the western and central floodplain coincide with peak floods in April. During this time fishermen in the western floodplain fish nearly every day and can catch between 2 to 3 baskets of 15 kg of Cichlids (Kumba) per day (30 to 45kg per 10 to 12 hours work). The catches start to fall in July in the western part of the floodplain as well as the central floodplain. During the low season, fishermen enter into the waters irregularly and the catch is for subsistence. The local fishermen explained that in this period the villagers are blessed with agricultural production but the fish stock reduces. The elderly people explained that the god of production as well as controller of the lake holds back the fish resource once maize and rice harvest starts. The temperature rises in the dry season and the floodplain lakes waters are quickly over heated forcing the fisheries to move to cold deep waters.

After the water recedes, the main season of fishing in lakes such as Lake Uba starts between July and October. After that no fishing would take place anymore for a certain time. The local fishermen preferred to visit the seasonal floodplain ponds instead of the lake because the high wind resulting in high waves in the lake make fishing difficult, expensive (fishing nets get destroyed), and dangerous because there are a lot of crocodiles and hippos. There is good fishing in April-May when floods are at high peak bringing sizeable fish from Selous Game Reserve lakes and replenishing the floodplain lakes as well as the Rufiji River. The fisheries available in the flooding season are exported out of the Rufiji District.

In the focus groups discussions the local fishermen prefer to engage in profitable activities such as logging to earn a livelihood in the flooding season than to embark on fishing, which has no market as there is shortage of cash, however, there is plenty of fish. It was said the agents of the urban traders at the local level manipulate the whole process as they buy fish from particular fishermen forcing the others to accept any price, which these agents decide. The local's disorganisation contributes to over exploitation by the agents because the selling of the fish is willing buyer willing seller. Lack of local organisation makes co-ordination and co-operation difficult.

In the past local appropriation rules and fishing techniques were strictly followed and the defaulters lined up in traditional courts administered by the council of elders. The implementation of the rules and laws governing the use of traditional techniques were crafted from the lineage customary laws and were to be within the framework of the lineage wishes and taboos attached to resource use and access. The communities were homogenous and in small numbers as face to face communities. Local techniques related to the fishing cycle were part of the institutional set up.

These techniques in fishing were controlled by the council of elders and the arrangements of access to resource was organised in a rotational system to give the lineage members equal opportunities to access the resource. The use rights were typically granted to all members of the group, which owned the resource or to specific sub-groups such as males or full-time fishermen. A body of monitoring group made sure the fishermen complied with the rules. The occasional fishing for home consumption was usually conceded to all group members. In some cases non- lineage members e.g. migrant fishermen were also allowed to fish under conditions, e.g. against payment of fees or reciprocal granting of access rights to their fishing grounds but their techniques of fishing were to be controlled by the host lineage. The system of reciprocal access worked well, especially between close kin members as compared to non-blood relationship people.

The main issue here is mistrust among groups, however, reciprocity was allowed in resource use in time of need. Different fishing techniques were used by the Makonde, who involved sometimes co-operation of a whole fishing community. One of the major examples was the Tanga; a traditional net made in a form of mat of 30 meters long and 1.5 metres wide. This mat showed space between the straws to allow the small fish to pass through, when the fishing activity took place. The technique was only used by men who were considered to be mature and well informed of the resource taboos. The youths were not allowed to participate directly but were to supply the fishermen with food and the selection of mature fish at the landing bays. The technique involved the traditional specialist, who was to perform a ritual before the fishing started. The traditional ritual was to protect the fishermen against the crocodiles, snake, and hippo's attacks and to request the lake spirit (*Subiani bin daudi*) to release the fish from the hiding holes deep in the waters. The fishermen had to move in water half immersed and mingled between the crocodiles but were not attacked. The crocodile responded if the lake controller and production god was not happy with the behaviour and conduct of the fishermen. Besides the Tanga method, the lineage members used other methods, which were locally accepted by the council of elders and mostly individually used:

Ndoano (hooks) were used by individuals but no permission was required for this technique. The technique was not considered to be exploitative because it involved one person but the quantity of the resource extracted was not taken into consideration in order to measure the impacts inflicted to the resource by individual fishermen.

Homelo (basket technique): This equipment was mainly used by women in the flooding season. The women concentrated their fishing activities in the garden ponds for subsistence and the surplus was exchanged into cash. The flooding season gives the women an opportunity to access the market and control the profits made from the selling of fish. The women are actively involved in fishing but there is less competition from the men. The household economy is subsidised with the income directly earned by the women from fisheries in the flooding season. The men struggle less to bring food to their families as compared in the dry season and much of their income in the flooding season end up in leisure or traditional rituals. The fishing sector, which is dominated by men, accommodates the women unconditionally in the flooding season.

The **Kanga** (cloth) used by women as part of their dressing is used for fishing in the flooding season. The fishing activity in the flooding period occupies the entire household members and even the less active can make cash easily. The household members stock their catch to wait for better market prices in the dry season. The preservation of the fish by smoking and salting keeps the fish from rotting and it can stay for months and it can be consumed without any problem. The consumption of fire wood in the floodplain increases in the flooding season per household because some fish species have more fat, which needs more energy to dry. The rise in supply affected the demand locally and the regional markets contributing to the fall of market prices. The local markets are saturated with fish and nobody wants to buy fish because everybody in the village is a permanent or temporary fisherman at this period.

Local institutions were also selective regarding size of fish, especially in connection with the specific technique used. The use of these techniques had the effect that only mature fish were selected and the small fish were left for the next season. Moreover, especially the Tanga technique required co-operation and collective fishing which on the other hand also called for specific redistribution measures. The fishing activities were done in a collective way and it was not easy for an individual to go against the traditional fishing rules and laws.

The common techniques and fishing equipment used in Lake Uba and Mtanza are summarised below. Apart from the techniques mentioned, there was a variety of nets and also weirs as well as traps which were used.

Table 5: Fishing techniques and equipment in the two-floodplain lakes

Fishing technique and Equipment	Fish specie	Arrangement	Item Price
Circle nets (Mkugilo) lake encloses fish.	Kumba (Oreochromis), Pele (Citharinus)	shared or rented	Tsh. 1000-1200
Pulling net (Juya) poles on each side, pulling rope, four people	Pele(citharinus), kumba (oreochromis), mbufu(Bagrus orientalis), kambale(protopterus)	Normally shared	Tsh. 28800
Hooks (ndoana) lake or river	Kambale (protopterus), Kumba (Oreochromis)	N/A	Tsh. 100 per hook
Gill net (kutega) lake or river has floats. Leave in the afternoon until the next morning	Kambale (protopterus), Mbufu (Bagrus orientalis), Kumba (oreochromis)	Privately owned	Tsh. 5000-30000
Kimea (cone) shaped, weighted at bottom, use with canoe, two people	Beme(Brycinus), Kasa (petersius conserialis)	One or two people from same household	Tsh. 1800
Traps(weirs) (Nyando/wando) V-shaped trap made from sticks, fish caught with spears.	Kumba (Oreochromis), kasa (petersius conserialis), Beme (Brycinus)	N/A	N/A

Source: Meroka, Patrick 2004

6.3 Rules and regulations and their relation to worldview

Fishing in the pre-Ujamaa times was done according to regulations controlled by leaders of a fishing group, formalised in shared norms, which put emphasis on the collective rather than the individual gain. The local appropriation rules were strictly followed and the offenders were punished by the council of elders through fines, exclusion or curses considering the magnitude of the offence committed. The powers of the elders were legitimate and were supported by the lineage or clan members. The communities were homogenous and in small number and members used to listen to the advice given by the local authority and the entire lineage had respect towards their local leaders. The council of elders enforced these rules, which were widely accepted. The council was in charge of selecting the fishing techniques in the local lakes. In the pre-Ujamaa times the monitoring, regulation and sanctioning in fishing activities was done at the lowest cost because the villagers had direct benefits from the resource and all the lineage members were vigilant on the defaulter's behaviour. Every villager had a responsibility to report those who did not comply with the rules to the council of elders who had traditionally the bargaining power to bring the culprits before the traditional (Baraza) courts, where sanctions were implemented and fines had to be paid, if one was found guilty. These courts were held on the open places especially at the middle of the village to enable all villagers and even the weak people to attend. Before the meeting agenda were

discussed, the council elder welcomed his team as well the villagers to the meeting and gave warnings in advance to all attendants to behave and hold their emotions well while crucial issues were analysed by the elder's council. The elders reminded the villagers of their obligations and duties before the audience were informed of the problems to be discussed in that particular session. Men dominated the council of elders; however, women were allowed to give evidence, if the accused was a member of the female-headed household. The young unmarried men were treated like their mothers and where allowed to contribute but had to listen to the advices of the village or lineage elders. If implicated in an offence, their grandfathers had to defend them and had to apologise openly for any mistake made. The public apology was considered as a sign of reunification and reconcilement.

This same council of elders were entitled to handle all types of offences including the mismanagement of the common property resources. The council was to teach the youths the morals of the society and the cultural values attached to resources within the lineage boundaries. In the case of fisheries the youths were not allowed to fish until they had attained a certain age and all resource taboos were known by heart. The local rules and laws permitted elderly men to participate in fishing as the council of elders had trust in them and were guided by the traditional oath of fishing, which they took on the first day of fishing. The fishing oath was to monitor the behaviour towards the resource and sealed the contract between the fishermen and the master of the water. These mature fishermen had to observe the regulations of fishing and the resource taboos at all cost otherwise their career would end prematurely and their families would be affected indirectly. The old institutions excluded the youths especially from direct fishing because of the fear of losing the resource and the youths to be killed in the lake by the master of the water. If misconduct took place, this valuable resource was likely to be held back by the controller of the lake and the lineage vegetables (fish) would be missing on the table. That is why traditional rituals had to be conducted before the fishing activity could take place as a sign of respect to the spirit of production and controller of the lake.

Outsiders were allowed to fish for subsistence but not for commercial purposes. The council of elders allowed access to the Lineage Lake only to close relatives who were expected to reciprocate. The temptation to cheat was higher where the resource was limited and that is why the lineage council preferred to deal with close relatives who had to respect the local rules by taking responsibilities and duties related to appropriation seriously like any other local member.

Part of the sanctioning mechanism was related to the Makonde religion of spirits living in the water controlling the fish stock. On top of the super natural hierarchy was a spirit, which was literally called God of Production. The spirits in the water were seen as ancestral spirits controlling the resource with the God of Production. The annual rituals were made to reward the ancestral spirits for making fish available and protection of the fishers while in the lake.

The coming of the colonialists to Tanzania led to the changes in resource management and paved way for resource conflicts at the local level. The new policies, which were introduced by the colonialists, interrupted the traditional management of the resource, which the local by-laws enforced. The bargaining powers of the lineage or clan elders were reduced and the colonial government applied indirect rule at the local level to manage the resource. However, the local leaders maintained their traditional positions and were given more powers by the colonial government and their patriotism to the local people's interests ended as they became the servants of the colonial government. The crafting of the laws by the colonial government to protect the resources did not address the desires and needs of the local people who had used the resource for decades as a livelihood. The introduction of a tax by the government forced the subsistence resource users to change their consumption behaviours and join the market economy. The penetration of the foreign religious teachings into the local level made the young people rebel against the traditional religion, which had protected the resources for centuries.

The resource taboos, which were integrated in the traditional religion, were rendered powerless through western religion as the missionaries continued denouncing traditional religion. It is said that the acceptance of foreign religion caused impacts on the common property resources in Rufiji and other parts of the country. The problem started as the locals changed the annual fishing rituals to the super natural spirits and started performing it occasionally and these behaviours did not go down well with the controller of the lake. The conservation ethic may be an important feature of the sustainable system if the intent to conserve and observing actual behaviour is taken into consideration. Intent will not translate into actual conservation, if communities or individuals are not able to determine the effects of their actions on stock levels.

The fishing rituals, used to be offered in the Misimu (Shrines) at the lakeside before the active fishing season started. The offers accelerated the production and the availability of fish in the lake. If the controller of the lake accepted the ritual, then fish were released from their hiding place and were available all over the lake. The fishermen enjoyed the catch, as there were

fewer struggles due to the availability of the fish after the ritual specialist had done his work. It was against the fishing culture of the Rufiji people to take the young fish out of the water. The Rufiji people had taboos attached to fishing which were observed in all seasons. The implementation was done by the lineage elders and in many cases the locals respected and applied them without force. The resource taboos provided low monitoring, enforcement and lowered sanctioning costs as the traditional institutions applied customary laws to implement them. According to one author (Olomola, 1993), everyone accepted the responsibility of "being his brother's keeper". Sanctions were often fines or confiscation of gear, but also social sanctions such as public shaming were applied. The Rufiji people knew that the violation of the taboos lead to illness or cause deaths to the household members of the fisherman who goes against these taboos. Through such beliefs society members feared the spirits because of the supernatural powers and the spirits controlled all the natural resource in the region. The supernatural beings are believed to set rules for resource utilisation and enforce them, sometimes by killing the violator (Dangbègnon 2000).

The natural misfortunes in the lineage were traditionally connected to acts of the spirits, which were invoking illness upon people (Ichikawa 1993, Reichel-Dolmatoff 1976). Such self-enforcement is due to the beliefs in "automatic sanctions", i.e.; the violators who disrespected the rules carried its own penalty (Posner and Rasmusens 1999). The Rufiji customs prohibited the fishermen to smoke, urinate, or take a bath in the lake after having sex. The violation of these lake taboos led to severe consequences for the defaulters. The junior spirits attacked the culprits in the form of crocodiles or hippos and sometimes the defaulter was not able to catch even a single fish until purification rituals were performed to appease the anger of the super natural spirits. To amend the situation the defaulter's family had to respond immediately with offers to curb further bad omens, which were likely to affect the next kin.

The lake closing taboos were adhered to in the past and the council of lineage elders were strict and nobody was allowed to take fish out of the ponds or community lakes during the closed period. The traditional calendar was followed to protect the pregnant fish and the young ones against the resource users. The breeding sites were attached to the closing taboos and were regularly monitored by the community members. The closing taboos were lifted once the council of lineage elders were satisfied of the maturity of the fish in the lake.

The resource taboos and the work of spirits protected the misuse of the resource in the traditional institutions as the villagers feared the consequences, which would follow and that

prevented them to go by their desires and needs. The co-ordination of resource taboos and the fear of spirits plus the application of traditional techniques in fishing preserved the fisheries in the floodplain lakes in the pre-colonial and part of the colonial period. The elderly people who were knowledgeable of values, norms and taboos concerning the use of resources did the informal education on resource use to the young people. The young people were taught the functions of the taboos and their applicability to avoid unnecessary punishments from the controller of the resources. The Rufiji people had observed lake taboos for many decades but today the youths enter into the lake without observing these taboos.

These are the taboos of the lake or ponds, which the Rufiji people applied to conserve the resource and to protect themselves against the anger of the lake spirits.

Not to urinate into the lake

Not to wash an object with black colour in the lake

Not to take a bath in the lake after having sex

Not to smoke while fishing

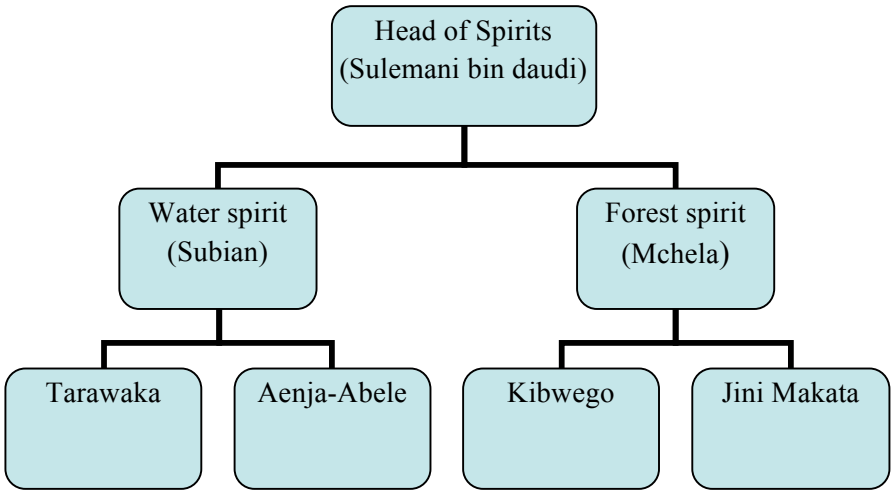
Not to sail through the lake while menstruating

Not to leave the human waste in open.

The head spirit and the juniors, who are considered as the soldiers of the lake, co-ordinate to punish the resource defaulters and react swiftly once the presents are not coming from the resource users. Particular spirits respond with crocodiles and others with hippos and the others with flu or skin diseases. The spirits presented in the diagram here below have various functions and their presents or gifts are different. The commander of both land and water is Sulemann bin daudi and likes to take human beings as a gift. The spirit is believed to be everywhere and that is why the offer or gifts have to be directed through the junior spirits but the name of the commander is mentioned in prayers once the specialist is performing the ritual. As already mentioned, the spirits present are given in a group, family or individual but in the 1950s it was collective. The spirits communicate with the ritual specialist and all gifts are known by the village specialist Mzee Kauji, who was taken by the spirits and stayed in the lake for one week and came back alive. Mzee Kauji knows all the spirits in Lake Uba and their gifts as well. The lake and pond spirit Subian likes sugar cane, bananas, sodas and cigarettes. The female spirit (Kabibi) likes bananas and sugar cane while the Musungu Spirit, which speaks English, likes sugar cane and cigarettes and Tarawaka the male spirit, which is known as the head of all spirits in Lake Uba likes sodas and cigarettes. These spirits cause

different problems to the taboo violators. The skin problems are caused by Kibande and in this case the traditional healer has to be contacted or the ritual specialist. Kabibi and Aiach ya Mbili (two daughters) have the power to hold the fisherman dugouts while fishing. The European spirit (Musungu) is well known for hippo attacks and the fishermen try to avoid Musungu point in the lake of Uba and that gives the fisheries security. The breeding areas are believed to be at Musungu's site and that is where large fish are found. Those fishermen who approach the site with respect do get a lot of fish but many have been chased by hippos and their nets destroyed in the process. The spirit Tarawaka responds with crocodiles and strong flu, which keeps the defaulters out of the lake until the appeasement ritual is made.

Figure 8: The Spirits Structure



Source: Meroka, Patrick 2004

The spirit's role in resource conservation and management is clearly defined in the traditional institutions, which were disrupted with the emergence of the state institutions in the 1970s through the mixing of ethno professional groups in one ecosystem previously with diversified customs and beliefs on resource use and conservation. The cultures and norms and values, which were attached to the resource, disappeared gradually leading to misuse and mismanagement of the resource today. However, although the state won through changing the policies and territorial boundaries, the functions of the spirits remained unchanged and the impacts of the spirit's role are still recognised by elderly people in the floodplain. The consultation of the spirits made the activities of the locals productive and gave a guarantee or security for their livelihood. The human behaviours are more destructive than the policies, which the state considers to be the best tool to protect the resource.

The spirit (god) *Subian* reacted with anger once the fisherman's behaviours changes and withholds the resource back and the local fishermen are forced to look for alternatives elsewhere for a livelihood.

6.4 Changes up to Ujamaa times

During pre-colonial times in the 18th century, fishing was an activity closely integrated with the culture and traditions of fishing communities. Fishing activities and traditional fisheries management systems were linked with traditional ownership of resources (Owino 1999). Local leaders were vested with powers to control exploitation of fish resources and distribution. Fishing was limited to inshore areas of lakes, ocean and the river mouths. The catch was sufficient for food and subsistence barter trade. The traditional fisheries management system was based on community ownership whereby responsibility for the management of the fisheries resources was in the hands of the communities themselves (Owino 1999).

During the colonial period (1888-1960), the traditional fisheries management system based on community ownership was replaced by a centralised management system. When the Germans ruled Tanganyika, the local communities were deprived of their rights to manage the natural resources, which were later controlled by the state institution. The British government was different compared to the Germans as the local communities were allowed to participate in resource management through the native authorities in co-operation with the local chiefs.

The centralised system, which consisted of restrictions (legislation) on the exploitation of the resources, was imposed on the local users (Owino 1999). During this period, improved fishing gear such as gillnets, trawl nets and long lines were introduced (Owino 1999). This development was limited to few communities who were living near to the modern towns established by the colonial administration. The rest of communities did not have access to these improved fishing inputs. The introduced regulations however were applicable to all fishing communities. An important development during this period was the establishment of the Fisheries Service Institute in 1947. This institute was later named East Africa Fisheries Organisation (EAFRO). It played a major role in providing services such as, training and scientific research. EAFRO collapsed in 1977 (Owino 1999).

The colonial DC Yange introduced the fish markets in Rufiji district. Rufiji people started trading the resource to generate income. The society viewed fish as a market resource as well as subsistence product. The market value of this resource attracted local and external users to the business. Between 1940 and 1947 fish was known as "Ngende" meaning money and this

was the same time when the Malawi fishermen accessed Rufiji floodplain lakes with their technology in fishing. The new technology was strongly rejected by the elders because it lacked blessings from the ancestral spirits and the god of production as well as controller of the waters.

The introduction of the fishing nets and emergence of the new state institutions changed the fishing techniques and the elderly people at the local level no longer controlled the access rights but the central government took over the entire management. The management of the fisheries through the central government in many parts of Tanzania was not cost effective. The designation of the fish resources as open access in the floodplain in particular affected the ethno professional groups, which have depended on this resource for their livelihood for decades. The disruptive effect of the state fisheries authorities on rational community based management has been noted by Scudder & Conelly (1988). The net fishing traditional equipment for the Malawi nationals was introduced in Rufiji floodplain in 1947 during the colonial regime but the Rufiji people especially the council of elders opposed its use but the colonial government supported the Malawi fishermen.

The villagers started fishing with the Malawi fishermen in the floodplain lakes using the new techniques (nets and dugouts). The traditional rulers opposed the use of the nets but the colonial government did less to ban the use of nets in fishing. The replacement of traditional techniques with net fishing attracted many young people to the fishing activities, which was done for the market. These novel technology and market incentives led the people to harvest a much larger portion of the standing stock than the recruitment of the resource. The motto was "gain rather than restraint" and this capitalism ideology spread quickly among the young generation who saw the fish as money and it lost the human face in conservation. The change of traditional techniques rendered the traditional fisheries management institutions powerless. Those who took over the management used their position to enrich themselves or assisted their relatives to exploit more than what the rest of the users were allowed.

As already mentioned in this paper, fishing activity in the pre-Ujamaa times was based on customs and traditional ownership of the fishing lakes in the floodplain. The traditional fisheries management system was based on communal rights. These rights were vested in community or clan leaders. The traditional ownership over the fisheries resources also extended to the landing bays, which were owned by the clan and the clan elder only decided access to such areas. The lineage or clan members recognised their fishing sites through the names of their lineage or their leaders as some of the fishing sites were named after the

lineage leader. These landing sites were named after communities or the heads of the communities/clans or any other names that signified the importance of such landing sites in term of culture or socio-economic values (Owino 1999). These names of landing sites are still maintained today and have an important meaning in the management of the fisheries resources in some areas.

Access was restricted to only few fishermen who were respected by the communities and had long experience in fishing. These fishermen could harvest selected species in certain areas and resource taboos were respected. No fishing at all was allowed during certain periods of the year especially during the rainy season, which was believed to be the spawning season. Outsiders (non-clan or community members) who wanted to exploit resources from the communities who owned a fishing site had to seek permission from the head of the clan or other elder leaders in the community. Application was judged based on availability of resources and the social status of the applicant such as marital status and age. The clan-based regulations on fisheries were part of a wider system of socio-cultural relationships existing between clan members as well as other communities. The regulatory system was thus very much an integral part of the communities. All decisions were made within the traditional legislative framework and supported by the clan customs and beliefs.

This system of resource access and management was transformed as the political regimes in Tanzania changed. The traditional institutions were replaced by the state institutions, which managed the resource through new state policies. The state crafted the policy to protect the resource from mismanagement but rather such policies opened several outlets and the resource become open access.

6.5 Independence and Ujamaa

After independence in 1961, the new government established the Fisheries Division under the Ministry of Agriculture and Livestock in 1966. The national policy was based on a socialist ideology and a state run economy. According to this policy, people were mobilised from their traditional scattered villages to live and work together in large villages planned by the central government, called Ujamaa villages. The government had the responsibility to provide social services such as education, health and other infrastructure (Nyerere 1968).

Under the socialist economy, a top-down approach was maintained to the fisheries management, where decisions and plans were made by the central government and later sent to communities and lower levels of government for implementation. In 1970, the Fisheries Act No 6 of 1970 was enacted by the parliament of Tanzania to replace the colonial

legislation. Under this Act, which is still in force, the minister responsible for fisheries is empowered to develop subsidiary regulations (MNRT 1970). In general terms, the Government enforces these regulations through a top-down approach.

Under the socialist economy, commercial fishing was operated by government agencies. Tanzania Fisheries Corporation (TAFICO) established in 1974, was the main state owned company mandated to carry out commercial fishing in both marine and fresh waters. The government had powers to hire and fire TAFICO staff. Later on the company experienced a lot of losses and inefficiencies in its operation.

In mid 1980s, the government embarked on a major economic and political reform programme. The economic reform programmes have transformed the command-based economy into a market oriented one. A corresponding new fisheries policy was developed in 1997. A major component of this policy is the devolution of fisheries management obligations from centralised control to communities (Government of Tanzania 2000).

The emergence of clannish tendencies in the floodplain promoted cheating as the opposition or disadvantaged groups crafted their illegal institution to deal with the enforcement elite. The default by the fishermen made the management of the fish costly for the government. Fishing activities turned into a profession for many youths in the floodplain and its social meaning eroded gradually. The introduction of the dugouts in fishing opened new jobs for the dugout constructors who started using the forest resources. Most of the durable trees, which took many years to mature, were cut down for the manufacture of fishing dugouts. The use of nets and dugouts meant the increase in fisheries output, forcing the fishermen to use more forest resources for smoking fish before transporting to urban markets.

Evolution in the fishing sector changed the social cohesion and co-ownership, which the community used to enjoy. The powers of the traditional rulers were reduced and the state officials, lacking social-economic and political background of the former resource users, did the regulation, monitoring and sanctioning. The resource values, which had guided the clan in management and sanctioning, were overcome gradually by the external users' interests. The traditional fisheries management concepts failed to work because the external users' rights of access were payable. The state's institution issued fishing licences to commercial fishermen but failed to indicate the quantity each user was supposed to extract. The common culture, which existed in the region for decades, was replaced and the new society became multi-cultural and there was no more unifying culture to regulate the resource. The homogeneity of the ethno professional groups was guided by the norms attached to the resource. The

consequences of going against these norms was clear to ethnic group members and to avoid natural calamities, all the villagers' behaviours and beliefs were controlled by the culture of that particular clan or lineage. In traditional institutions the lineage members were allowed to take exactly what they needed to use for home consumption but the intrusion of capitalism in the area affected the resource stock and conservation became an agenda to restore the status of the fish, which was experiencing stress from over fishing.

The capture of certain fish species traditionally was prohibited either totally or only in certain waters and this had evolved from the recognition that the collection of juveniles in one fishing season led to low catches in the next. Traditional religion played a role in restricting lineage members from consuming particular fish, for instance where fish were regarded as sacred or a result from a taboo to eat fish, which exists for a small number of ethnic group in sub-Saharan Africa (cf. Simoons 1974). Clans or communities which have a particular fish species as their totem are not allowed to eat or catch that particular specie but the emergence of the new institutions disrupted such customs and beliefs.

The traditional rules of access to the fishing grounds were replaced with government by-laws, which scraped traditional rules and formal fisheries department was established locally. The fisheries department opened local fishing sites to external new users who accessed them through the payment of fishing licences. The fishing licences protected the new users and gave them bargaining powers to access all lakes through the ideology of citizenship. This means that all Tanzanians are allowed, wherever they want, to engage fishing activities without restriction. The external users claim the use rights because they are citizens of Tanzania like the local inhabitants. The Ujamaa ideology united all Tanzanians and access to resource became open access to all. The dismantling of the territorial boundaries in the 1970s gave every member an opportunity to benefit from the available natural resources, at least to the extent of securing household subsistence as well as for the market. The strategies of equitable resource use, which included reciprocal exchange and mediation within the community, and the maintenance of ceremonial and cultural values, which supported the concept sunk down as the boundaries lost meaning on the eyes of the Rufiji people. The establishment and enforcement of such regulations within the territorial boundaries of their rule was the responsibility of traditional authorities, usually council of elders or similar institutions. In West Africa, for example, there is an earth priest legitimised by being a direct descendant of the founder of the village, who decided on most issues and performed the rites connected with the waters and its use (e.g. Oualbaded et al 1996).

The change of old institutions and the emergence of the new state institutions contributed to the depletion of the resources and gradually affected the livelihood of the local communities. In the past the whole lineage observed and enforced compliance to traditional rules, which were usually effective because of the high degree of acceptability and legitimacy they entailed.

The commercialisation of the resource attracted more resource users from various sectors either directly or indirectly contributing to high competition in resource use resulting in the decline in fish production. Many of the floodplain communities now depend on fish not only as food source but also for their income. The economic constraints facing the floodplain communities have forced them to change their consumption habits and beliefs towards fish, which protected this resource in the pre-colonial time. The breakdown of cash crop co-operatives and climatic change in the recent years have affected the main economic strategies of the floodplain people and now the remaining lucrative business is the commercialisation of CPR. The decline in food production left many households with no food security and the only alternative to secure food was to open sources of income through the diversification of livelihood strategies. The ethno professional ethic of resource use is no longer applicable; however, some lineage members are still recognised in particular events such as rituals, as we will see later. But generally Ujamaa policy did not only open the fisheries for new users but by abolishing internal ethnic organisation and co-ordination made fish available for all the groups in the Rufiji area. This laid the basis of the current livelihood strategies of the people living in the Rufiji floodplain whereby everybody can be engaged in the whole range of resource use activities. This means that fishing is no longer an exclusive activity of specific ethno professional groups using this CPR governed by their institutional set up but by all the groups living in the Rufiji floodplain. This means that local rules are not only changed or transformed within a group but also in a wide setting without enforceable rules and regulations.

The multiculturalism in the region has coincided with a resurgence of identity politics, which involves demands for recognition of a social subgroup of cultural uniqueness. The identity politics has made the management of the fisheries and other common pool resources difficult in the floodplain as the minority groups try to work the opposite and not co-operate in the management. The demands of the minority groups to be incorporated in the management can lead to the sustainability of the resource in the future. Some stakeholders want the lake to be divided up into parcels but a water body is hardly to be demarcated or fenced off like agricultural land. To treat this resource as common property and to be shared under a common

property regime collective action is essential to enable the users organise and co-ordinate. This corresponds well according to the wishes of the locals and that will provide a suitable framework for the joint utilisation of such resource, as the locals can prevent unauthorised extraction by outsiders and "*free riding*" by group members and external user. In this way, legitimate users, withdrawing from the resource in a permissible way, can have a reasonable hope to participate in future benefits and therefore have an incentive to conserve the resource.

The locals feel that the revitalisation of the traditional techniques, ritual functions and resource taboos will reduce the pressure and problems facing the resource today. Due to social, economic, political and technological changes, which have severely limited excludability of the traditional institutions, will never work alone in the current situation. The collective action of all stakeholders is seen as the only way at the moment to curb further depletion of the fish stocks. The replacement of the traditional techniques (*Tanga*) with the modern fishing nets opened the gates to foreign resource users leading to the transformation of the rural subsistence economy to the market economy. The new fishing technique costs are higher than the local forcing the resource users to intensify their fishing activities to cover the financial expenses encountered in the process. The commercialisation and improvement of technology in fishing methods have contributed to rapid change of resource use and access in the floodplain. The social-economic importance of the resource has attracted many stakeholders at local and regional level. The high demand of fish contributed to the change in relative prices and the bargaining power at the local level affecting the management of the resource. The institutional change with new rules and regulations sidelined the council of local elders from the entire management of the fishing activities in the clan lakes. The new state institutions with weak monitoring and sanctioning machinery contributed to the diminishing of the common pool resources in Rufiji floodplain. It is said that the high competition between the locals and the newcomers with rational profit orientation accompanied by destructive implements such as mesh size nets of less than one inch. The newcomers with bargaining powers have taken control of the fisheries in the local lakes and have engaged young village fishermen to do the job for them. The newcomer's employers transport the resource to distance markets where the fisheries are sold for high prices as compared to the local market prices. The fishing sector is currently under the control of the young fishermen who are less informed of traditional norms, which were attached to the conservation and regulation of the resource in the pre-colonial time.

The economic problems experienced in the area today have forced fishermen in this region to change their livelihood strategies. The agricultural sector contributes too little towards the

household economy at the moment as compared to the time when the co-operatives societies were functioning in the early 1980s. The global climatic change has affected the floodplain leading to underproduction of agricultural products as well as continued warming of the lake waters forcing the fisheries to hide at the bottom of the lake. The inhabitants of the floodplains generate a great percentage of their income from fishing sector as agriculture remains at the bottom in ranking. The long periods of drought and unpredictability of the rains in the floodplain have not only affected the agricultural sector but also contributed to the decline in production in the fishing sector. All the economic activities in the floodplain depend on rain and normally the floods which occur after the long rain plays a great role in the both fishing, agricultural and wildlife sector. The rain increases the soil fertility in the floodplain and farmers can grow crops without using fertilisers. The floods keeps off the fishermen from the community lakes and their fishing activities are carried out in the river or seasonal garden pond giving the fisheries in the lake a break for breeding. The acceptance of the modern fishing techniques by the locals and abandoning their old techniques has affected the sustainability and availability of the resource in the lake of Uba and Mtanza today. The inhabitants are looking for ways to revamp the depleting resource but the formal management blocks every step the locals make to control the fisheries management as it was before Ujamaa. The locals remember the closing of the lake in 1979 was effective and all the fishermen and the buyers were forced to pay for the tax of entry to the lake by the village government. The tax was to be invested for development projects in the village but later the collection of such tax was scrapped off, when the divisional officer took all the money, which was collected from the fishermen as well as the traders.

The government in 1997 adopted the current national fisheries policy. The strategies of this policy are based on the overall government objectives which aim at poverty reduction, creation of employment opportunities, increase food security, increase economic growth and environmental conservation. The need for a new fisheries policy was already felt back in the mid 1980s. This was the time when the country had embarked on socio-economic reforms in order to revamp the national economy and facilitate economic growth.

Under the current fisheries management system, the right to harvest fisheries resources is granted to individual fishermen on an annual basis through a licensing system. Harvesting rights are defined in the Fisheries Act No 6 of 1970 and its subsidiary regulations. These regulations include fisheries (inland waters) regulation of 1981 which is concerned with gear restrictions and closed seasons, the general fisheries regulations of 1994 which deal with restrictions on size of engines, mesh size and fishing vessels.

The new fisheries management organisation structure in Tanzania is under the fisheries department, which is controlled by the ministry of natural resources. The fisheries department has the responsibility to implement all the fisheries policies at the local levels but less has been done. The state is responsible for the monitoring and regulation of the resource. The implementation of this new fishing policy is still to be reinforced because the state lacks sufficient manpower and finance to support the implementation. The land act of 1999 has been over taken by events such as liberalisation and privatisation making the management of the fisheries difficult at the local level. However, although the villagers are supposed to manage this resource, still the district officials are controlling the management and collecting taxes. The district authority is reluctant to implement the policy because much of the district revenue comes from the sale of the CPRs mainly issuing of licences and levy charges. However, there are fishing communities and government organisation structure levels are complicated to deliver services to fishing site. The state institutions are weak and a good number of the officials have personal interests in the resource and that contributes to the failure of the state to manage this valuable resource. The presence and absence of the state is the major problem facing the common pool resources in the floodplain and other parts of Tanzania. There are approximately 120 ethnic groups in the country. As mentioned earlier, the traditional scattered village system was transformed into a village system called Ujamaa village system after independence (Nyerere 1968). Under the Ujamaa village system different ethnic communities were mobilised to work together and form a uniform communal system based on equal distribution of social services (education, health services) and collective ownership of the main means of production (Nyerere 1968).

For the past three decades, the Ujamaa village system has remained as the standard and is by now considered a traditional way of living for all local communities in rural areas. Traditional fishing communities in Tanzania were well organised and defined their social identity through the type of fishing activities. They lost their lineage sovereign in the consolidation process of the scattered hamlets in the floodplain and the ethno professional groups were forced to abandon their customs and beliefs on the resource, which had been used for decades. These ethno professional groups are rarely recognised in the management of the resource today. The major groups, which are found in almost all fishing communities include absentee boat owners, external fishermen, boat repairers, fish traders mostly women, net makers etc. The state, stripping the lineage leaders of resource management powers and giving the village government a mandate to implement government regulations at the local level did not improve the matter. The village governments officials are not on the pay roll like other

government officials and that is why such people find it difficult to manage millions but their economic constraints are hardly considered by the state. The state has failed to command grass root support from its own officials who have built private cartels to generate income.

The control of fishing ponds in the floodplain by the state mainly in the Selous Game Reserve has pushed some fishermen out of the region and now have joined other fishermen in two of the over fished lakes (Uba and Mtanza) in central and western floodplain. The reduction of the fishermen's mobility leads to high concentration on the few lakes contributing to the depletion of fish in these lakes in the floodplain. In the pre-Ujamaa time fishing was not the main economic activity in the floodplain; the emergence of the Ujamaa policies affected the fishing industry in the floodplain. The new state institution denied the villager direct access to lakes in the community land or in the Selous Game Reserve, which was curved from the community land of Mtanza/Msona. Many of the inland lakes in the floodplain are found inside the Selous Game Reserve. Before 1945 the villagers used to have access to these lakes, which are not conserved and protected by the Selous Game Reserve. The mobility of fishing activities in the floodplain lakes gave the fishermen a chance to continue fishing without causing negative impact on the resource. The lakes in the Selous Game Reserve have plenty of fish acting as the breeding place in the floodplain. The resource in these lakes regulates naturally in the rain season. The floods, which occur between the month of March and May in Rufiji District replenish the already over fished lakes in the south, which are outside the borders of Selous Game Reserve.

The traditional collective management of the resource ended after the introduction of the Ujamaa- policies in Tanzania. The traditional patterns of resource allocation, which were considered to be equitable, changed and the traditional rulers lost their powers of resource distribution, tributes, which gave them powers to stabilise the institutions in charge of fisheries management in the old institutions. The Ujamaa policies opened the borders, neutralised the powers of the traditional authorities and replaced them with government appointees, who were to carry out all the government administrative functions in the area. The transferring of the common pool resource management from the traditional authorities to the local village government brought the appropriation rules, which were used, in the pre-Ujamaa institutions to an end. The emergence of the new state institutions did not cater to the livelihoods of the local communities but was to carry out the state's functions. The state's management was not based on the sustainability of the resource but on use of resource to generate revenue. The introduction of taxes and other costs related to the use of the resource contributed to the misuse and mismanagement in 1970s. The introduction of the fishing

licences and deployment of the government officials to the fishing sites undermined the traditional ideology of the local people on the resource.

In the year 2002 the village government was directed by the district government to close the lake of Uba to enable the fisheries to regenerate again. The officials restricted the youths to keep off from the lake but still the fishermen from Ikwiriri and the neighbouring village Mpima accessed the lake. The fishermen from these villages complained of being discriminated by the district officers because the district was working with IUCN, which was considered by the villagers as a buyer of the lake. The declaring of the Lake of Uba as a conserved lake without involving all the stakeholders angered the Mpima and the Ikwiriri people who depend on the lake for their livelihood. The closing of the lake without providing alternatives to the dependants proved useless because the village government failed to control the fishermen from the neighbouring villages in accessing the resource although declared officially closed. The absence of the state in this case was a clear indication that the directives were to meet the requirements of the donors but the activities remained the same. In case the district wanted to close the lake then reinforcement of the law through the village government empowerment was necessary. Lack of proper institutional framework rendered the closing of the lake impossible and the competition increased among both local and external fishermen fearing the closure of the lake.

The village government officials commented, the closing of Lake Uba was ill advised because the state was not ready to commit itself. The village government officials seem to have known the tricks, which were applied by the state to please the donor. The implementation of the project after the departure of the donor became difficult because the behaviour of the locals changed for economic reasons but did not last long after the donor had left the place. The implementation of the project stalled because of political and social differences in the village.

6.6 Changes during post-Ujamaa times

The depletion of fish in the Rufiji floodplain is connected to the lack of respect to the spirits and commercialisation of the resource in the 1980s, which has attracted many users from the neighbouring villages and Ikwiriri Township. The new resource users have created their own institutions in fishing, which have increased pressure on the resource extraction and the management of the resource is in the wrong hands. During the Ujamaa Policy all the Tanzanians were given freedom to move all over the country and to settle freely wherever they wanted. The free mobility of the citizens applied to the use of the natural resources as well in the country. The government of national unity demolished the traditional territorial

boundaries and crafted new policies for governing the CPRs in the floodplain and the same were applied in the rest of Tanzania. The traditional rulers had a hard time excluding outsiders from resource use. The state policies have become meaningless because of their weakness or they are non-existent in the practical sense. The continued migration of new resource users to the floodplain has capitalised on the weakness of the state institutions, which are not able to control the management of the resource. The bargaining powers are controlled by the minority groups, which are financially stable and have a political backing from the state. The fisheries, which were considered as common property by the lineage people, are partially controlled by the state and private actors who are believed to have links with the state.

The emergence of the new institutions eroded the informal institutions, which protected the resource from mismanagement. The new institutions lacking local support in regulation, sanctioning, monitoring promoted illegal poaching of the resources. The state institutions experienced stiff opposition from the locals but the state used force to pressure the locals accept the new policies. The new users become a threat to traditional resource management and their presence at the local level interfered with the social network and the mutual cohesion of the ethno professional groups, which was replaced with individualism. The collective management of fish and other natural resources at the local level were transferred to the central government leaving a huge gap in administration at the local level resulting in mistrust and conflict with the state management.

The new state institutions with weak management machinery opened local markets to foreigners and high competition leading to price change, which affected the local's economy tremendously. The demand of the industrial goods increase and the extraction of the resource at the high rate contribute to conflict escalation between the young generation and the council of elders. The high demand for commercial goods has attracted the young fishermen and their interaction with the new users has made the management of the resource complicated at the local level.

The new users with their licences have denied the locals their rights to get easy access to the resource. The demand of manufactured goods from the urban markets has led to the application of illegal techniques in exploitation to meet the demands of the market. The resources, which were traditionally valued and conserved through the application lineage norms, are not spared today. The possession of electronic appliances in the floodplain is a symbol of social prestige and respect. The continued exploitation of fish without proper management in the floodplain lakes have contributed to the decline in fish productivity and

price increase pushing the low income earners to the periphery forcing them to engage in illegal fishing.

The drought, which has been dominating in the area for the last three years, is considered to be a major problem facing the CPRs in the area. The decline of water in the river Rufiji has affected the floodplain lakes because Rufiji River replenishes many of these lakes from the month of March to June (flooding season). The locals say, some years ago fish were easily available and weighed more than 500g each but due to changes in the water levels in recent years such fish are hardly found in the floodplain lakes today. The young fishermen guess the decline of the fish stock is not natural but connected to witchcraft practice. The witches are jealous of their success and that is why they have decided to punish them. The fishermen believe the accidents in the floodplain lakes are connected to the work of the witches. The practice of witchcraft is wide spread in the floodplain and many people believe that witches can do harm to successful people. The fishermen are aware of the witches but nothing can be done about it. It is said locally that the witches can reduce someone to a beggar through the disruption of one's economic activities. There are well known local examples where people have lost private property through the practice of witchcraft. The young fishermen today prefer to sell their catch outside their village where nobody knows them. It is believed that the witches can only succeed in their business, if they manage to retain part of the catch for their mission. The other scenario is based on the fishing materials, which the witches tie up and the fishermen will never have luck again to catch fish as it happened before. Despite the work of the witches, the fishing activities are a lucrative business and bring cash immediately. That is why many people have joined and now prefer fishing as a profession instead of farming activities especially among the young people[22]. Today fishing is preferred to other economic activities as it generates money quickly[23].

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[22] The young boys in the floodplain have stopped going to school and now call themselves professional fishers. These are the type of people who do poach fish from the selous lakes. Their ambitions is to get enough money for leisure and to fix their identity in the village through material possession such as radios. Locally the young fishersmen are considered to be wealthier and can have sex with local village women in exchange for money. It was observed that these type of people have detached themselves from their parents and are now residing separately in private houses where they entertain their lovers. However, islamic religion dominates the area,the limited cash flow and increase in poverty has promoted indirect commercial sex in the area as the practice is used to gain money. The practice is among the married women between the age of 15-40 years and the school girls.

[23] See picture and comments in annex 1.

The cash problems and food insecurity facing many of the households in the floodplain today have forced the parents to encourage their young sons to join fishing activities to contribute to the household expenditure instead of going to school. Many of the youths complain that the workload their fathers have entrusted to them is heavy and that is why fishing activities have been dominated by youths that are between 15-20 years old[24]. These are the active fishermen today who do go to the lake twice or three times a day thinking that continued casting of their nets will reward them with a catch. The behaviours of the fishermen without fish after spending the whole night in the lake is like a hungry lion, which has been unsuccessful in hunting. It was observed how stressed the fishermen were and how their tempers changed, from being communicative and responsible people. It was said that the depletion of the fish stock has contributed to poverty in the village as formerly operating kiosks have been closed down as the owner's main customers were fishermen. Today young people have started diversifying their livelihood strategies, as the income from fishing sector is not reliable any more. The villager have now realised the importance of fish to their economy after the shortage of cash flow in the village, which has forced many fishers to change their behaviour towards the recommended gears.

Because of the high demand and low supply of fish today the official fishing techniques have been changed to meet the demands of the consumer as well to place the supplier on a better economic position. However, the fishers have violated the fishing rules the reasons behind are luck of personal fishing equipment. Young fishermen rent fishing nets from private owners and the catch is divided equally between the net owner and the fishers. Thereafter the fishers are obliged to sell their share to the net owner who transports the catch to urban markets such as Kibiti or Dar es Salaam. These young fishermen are bound to work with the net owners otherwise the chances of losing a net are high because many of the youths in the study villages are ready to work for such people today. The pressing economic conditions have made the life of the young fishermen complicated and have no choice rather than to remain in the business despite of the tough marginal profits made from the business today. The pool of manpower, which is yet to be tapped, is blamed for the hardships the current young fishermen

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[24] The idea of young fishermen being contributors to the household budgets in their respective homes was opposed by some parents but partly some agreed their sons do bring a kilo of Unga (Maize flour) in every two days and this happens once the mothers complain on food shortage in the household. Those who opposed argued that the boys are committed to their fishing activities to feed their lovers but not their family members. Some of them have never been seen at home as they are always hiding in the lake and in the evening go to their newly build houses posed a parent.

are facing in building their career. There is open lobbying that is why the fishers have to remain loyal to their bosses despite the dangerous conditions in the lake. The fishermen do complain of the coldness, dangerous animals such as crocodiles, hippos as well as little catch after spending the whole night in the lake.

However, the government fishing department rules recommend all fishermen to use 2.5 inch fishing net as standard but today nobody is using it and the fishers have gone against the fishing regulations and now 1.5 inch or 1 inch are used as standard in most of the floodplain lakes. The fishers were forced to change the net size as there is lack of big fish in the lakes and that is why the government fishing rules are not followed any longer by the fishers. The rational thinking of reducing the size of the fishing has affected the fish stocks pushing all fishers into the same cage (the prisoner's dilemma). There are too many boats well as fishers in these lakes and everyone has to fight for his family. Lack of proper control in these lakes has affected all people depending on resource from these lakes. The high competition and lack of reliable institutions for proper management of the resource is the current threat to the fish stocks in the floodplain lakes. The rational thinking of the fishers has affected the fish stocks as the fishing activities in these lakes as turned to be a competitive game today. It was observed the fishing techniques determined the sustainability of the resource as the fishers had different techniques of fishing in lakes.

It was noted that the fishing technique (Juya) scared the big fish as well as disturbed their habitants through beating the water to scare the fish to enter into the nets. This technique of fishing is considered to be cruel for the fish because it affects them psychologically complained some local fishers.

The complexity of fishing in the floodplain lakes makes the entire fish management complicated and unworkable. The different groups of fishermen with varying interests have increased the intensity of fishing for instance in the lake of Uba. Each group wants to undo the other by the size of fish caught per day and the amount of money earned.

Lake Uba, which is locally considered to be within Mbunju/Mvuleni village is accessed by fishermen from the Ikwiriri township, Mpima as well as the Mbunju themselves while Lake Mtanza is dominated by the local fishermen and sometimes fishermen from the neighbouring village of Nanyamiwil. It was said that the composition of interested groups in this resource plays a great role in its sustainability and conservation. It emerged that the larger the group size, the more diversified the interests of the actors became because communication became difficult leading to failure in co-ordination despite the common goals of the group, when the

size was small. When people lack adequate information, their behaviour towards the resource makes the management difficult; however, there is willingness to protect and use the resource in a sustainable way. This can contribute to problems of collective action as there is no trust among the actors. The conflicting interests as well as the nature of the resource itself leads to rivalry in consumption, difficulty in exclusion and protection of common pool resources particularly in the rural areas challenging. Today the temptation to let others bear the cost of providing joint benefit threatens provision of the common pool resources in the floodplain. The obstacles to exclusion encourage individuals to free ride on the efforts of others, resulting in under-provision or degradation of the common pool resource, which was collectively managed through traditional institutions in the pre-colonial time.

A considerable body of theory suggests that collective-action problems are difficult, not easy to overcome (Hardin 1968; Olson 1965; Sandler 1992). Groups achieve co-operation and co-ordination in a wide variety of settings (Baland and Platteau, 2000; Bromley et al., 1994; Ostrom 1990). There is no guarantee that actors in any given situation will overcome co-ordination or social dilemma problems. There are cases, for example, in the Rufiji floodplain where groups have failed to solve these problems but one village has managed to act collectively on fisheries management. Other experience is unravelling of collective action after initial success on common pool resource management.

In the past the traditional rulers in the Rufiji floodplain used to close the lakes but the emergence of new state institutions complicated the regulation and sanctioning in these lakes became difficult. The traditional fishing rituals became difficult to perform because of heterogeneity and diversity of interests on the resource by the actors. The resource taboos were violated and the water spirits got annoyed and withheld the resource. However, the blame is shifted to the external resource users but the local fishers themselves are part of the problem. Through such behaviour, the closing of the lake is quite difficult because of individual interests and the fact that not all actors are involved in the discussion of closing of the lake. Those who do not feel involved in the exercise threaten to jeopardise the plans of the other groups because they claim rights of use, which are important for their livelihood.

The post independent government did not improve the situation of local fishermen but continued to cripple their livelihood strategies. The post-independent government maintained the colonial policies; however, promises were given to protect the interest of the local people and the natural resources to be managed by the council of elders. It was the opposite when the independent government took office all natural resources remained the property of the State

and the management was transferred to the central government. The State with weak institutions and lack of human resources has totally failed to control the management of this resource compared to the traditional lineage leaders who had total control over the resource in the past. The practical example is the opening of the fishing sites to the external resource users, who had to pay for access rights but lacked traditional resource approach practices, which ruined the sustainability of the CPRs in the floodplain as well as other parts in Tanzania. The commercialisation of the fishing sector profited the economically stable urban elite, who continued to exploit the poor villagers.

The fishing activity provides higher returns to households in the Rufiji floodplain as compared to agricultural activity today. Fishermen's gears are never idle in the course of the year. The most intensive fishing period is during the hunger period. The number of fishermen has doubled in the recent years because of the open access (free for all). However, the village government is aware of the problems facing the fisheries especially in Lake Uba more work is expected in order to overcome the problems facing this resource. It is difficult to stress on closure of the lake while people are in need of food, said the village chairman. Unless the state offers alternative ways of getting food, the common pool resources must be used to rescue the people's lives, posed the village administrator.

The fishermen complain about high prices for fishing implements, which have contributed to over-fishing in the lake of Uba and other lakes in the floodplain where collective action is yet to be implemented by the resource users alone. Continued fishing has overtaken reproduction of fish in the lakes contributing to the stock decline of this valuable resource. The shortage of fish in the lakes has forced many of the local fishermen to change their economic activities. The cutting of trees into undersize logs from the conserved village forest for sale in Ikwiriri is now the target.

The harvesters are doing the job to rescue their families from hunger, said one of the actors. The income from fisheries resource is not sufficient to meet the household budget today. The small logs to saw mills in Ikwiriri were booming business for the youths in Mbunju/Mvuleni at the time the author was carrying out the study in the village. The traders claim these smaller logs as off-cuts, thereby avoiding all forms of regulation and royalty payment. Although, the villagers are trying to diversify their livelihood strategies to maintain their daily requirements, the conservation efforts of the natural resource in this village of Mbunju/Mvuleni lack collective action.

The local people see the administrators as the key actors in relation to problems regarding the use of natural resources in this village. The collective action, which was initiated by the district authority in cooperation with the world conservation of nature (IUCN), was shelved after the non-resident actors' inputs failed to come. The consequences emerged as the residents' efforts to manage the project were thwarted by lack of financial and technical support leading to break down of the newly established institution for CPR management. The external support changed the management of the resource for a short while as the local residents were mobilised to back up the new management but lack of local goodwill cut short the life span of this project, which collapsed and all the achieved activities become open access.

The elderly people see that the management of fish under the village environmental management Committee (VEMC) will not solve the problems facing the resource today. This committee has been involved in mismanagement of the fisheries and other natural resources. The locals have less trust in the committee members because of the bad records of their reputation. The committee is not able to solve the conflicts related to the distribution of the resources and profits made from the sale of the resources.

The elderly people feel that the magnitude of conflicts has risen since the formation of the village environmental management committee. This group is said to be biased and incompetent to handle complicated issues on common property resources in this village. The approach applied provokes the villagers, who have now decided not to mind the VEMC but to concentrate on individual interests. The management of the fisheries as well as other natural resources worked when the (VEMC) management activities were financed by the IUCN but the resources started facing problems when the financial support terminated. The management group was intact and responsible as the external actors continued to monitor the general management of the group. A section of the locals see the failure of the initiative as a positive outcome because only the interests of the few were considered, as the right people were sidelined from the initial planning. The socio-cultural values of the resource were not included in the conservation model and although the conservationists stressed much on biodiversity, the human needs were less considered.

The VEMC approach lacked the human face and that is why many of the locals decided to water the whole project to teach the initiators a lesson for future reference. It was argued that as the village vegetables come from the lake, closing it meant alternatives had to be given; otherwise the locals were most likely to go against the management concepts.

As many of the rural people depend on common pool resources, any step to be taken to conserve such resources must consider the local needs as well as values and the collective participatory system must be applied to avoid mismanagement. In a village like Mbunju/Mvuleni, the management of the common pool resources can only succeed when all actors take active role in the entire management. The high competition on resource use makes the whole management complicated and difficult for the VEMC to achieve its goals.

The Village Environmental Management Committee (VEMC) is composed of young people who are easily bribed by the immigrant fishermen and some resident fishermen making the sustainability of the resource difficult. The use of under-size mesh nets in the Lake has threatened the existence of the resource but the authority responsible does nothing to curb the practice. Some of the VEMC members are active fishermen or agents for the urban traders at the local level. How can such people implement by-laws against illegal fishing who are also the targets of the by-laws? The overlapping of administrator's interests in the resource has lowered the support, which the villagers used to offer for free against the illegal resource poachers and under-size net users. The behaviours of the state representatives on the ground lack management experience and are easily compromised by local or non-resident resource users. The resource users in this lake of Uba are aware that nothing can happen to them even if they are caught using illegal techniques. The resource users and the body entrusted to sanction and do the monitoring, exchange hands and the game continues as usual. Although, the Fisheries department has crafted formal fishing by-laws to manage the resource, implementation mechanisms are still lacking and willingness and trust among the actors is needed desperately to enable collective action in this area. The village environmental management committee is totally unable to control the access of resource poachers as the power struggle continues among the residents. Although the newly enacted village by-laws are yet to be registered at the district level, the villagers are suspicious of the seriousness of the state to transfer the common pool resources to the community to manage them.

The continued interest in the resources by the district authority has deepened the mistrust among the villagers who see projects introduced in the area as a waste of time and resources, as the expected outputs are tied at the last phase. The villagers will only take an active role in resource management once the state steps back and hands over powers to the villagers to take all the management of the common pool resources within their jurisdiction.

State failure to provide the registered villages with title deeds opens the debate of how co-management can succeed when the boundaries within the villages are yet to be clearly

demarcated. The official demarcation of the village land will lessen or stop internal immigrants and the ideology of being a Tanzanian will be reversed and be given a different shape to encourage the local residents to work hard in order to profit from the resources within their village political boundaries. Citizen identity has contributed to mismanagement of common pool resources in the local areas as the wealthy and mighty people use the opportunity for personal gains.

The encroachment of wetlands in the rural areas is the practical sign and more is expected to take place in the near future. The recent occupation of land bordering Lake Uba in Mbunju/Mvuleni village reflects the rising interests of the rich people in the CPRs but is not interested in improving the economic status of the poor villagers. This lake is the source of fresh water for the three villages as well as wild animals, which flock the lake regularly in the dry season for water, as temporary ponds in the floodplain dry up quickly when the floods period is over. The residents see the planned economic activities of the newcomers as a threat to the environment. There is a possibility of l soil erosion taking place due to down wash in the rains season or by wind. The interference in the ecosystem of this lake is most likely to contribute to high pollution of the lake.

The blocking of the animal corridor to the lake will cause damages to the settler's products leading to animal-human conflict. There is a possibility the villages surrounding the lake will lose valuable resources such as wildlife and fisheries as well as water because of the personal interests of some individuals, who seem to have a higher backing arm in the government. The organ responsible for all natural resource management in the villages is confused on the whole issue and some of them point the figure to the village council, who might have crucial information on the deal. The VEMC seems to be working with hardships because the terms of work are not clear and the village council does overrule their decisions rendering them powerless. The interests of the village council on the resources have contributed to internal tensions and reports of VEMC to the district offices have gone unanswered. The villagers from the two study villages had bitterly complained of the entire management of the resource. A section of the fishermen said the village council has to be held responsible for the decline of the resource in the floodplain lakes because the implementation of the by-laws is slow and in some villages, is dead and existing just on paper but not on the ground.

6.7 Gender division of labour in fishing sector

This chapter examines the demographic and socio–economic characteristics of the interviewed respondents in the two study villages; it establishes how these socio-economic

characteristics affect the participation or non-participation of women and men in the fishing sector in the two study villages. It explores the traditional gender roles in the fishing sector and traces how these have changed with the commercialisation of fisheries in the respective study villages of Mbunju/Mvuleni and Mtanza/Msona. Further, there is a discussion of the gender community attitudes, beliefs and practices in fishing and their role in promoting or hampering the status of either gender in the fishing sector. Technologies that women and men have user and ownership rights in the fishing activities are explored. Lastly this section considers the coping strategies of both sexes that have been adopted to address the encountered difficulties by each sex

Table one below presents a summary of the key demographic and socio-economic characteristics of the interviewed respondents in the two-floodplain villages: namely Mbunju/Mvuleni and Mtanza/Msona.

Table 6: Demographic and socio- economic characteristics of respondents

Villages	**Mbunju/Mvuleni**		**Mtanza/Msona**	
Gender	Female (%)	Male (%)	Female (%)	Male (%)
Religion Affiliation				
Moslems	35	52	29	45
Catholics	8	11	12	22
Animistic	15	26	11	15
Age				
19-29	23.1	33.3	13.6	22.7
30-40	42.3	29.6	63.6	54.5
41-51	19.2	7.4	22.7	18.2
52-62	7.7	22.2	10.5	4.5
63+	7.7	7.4	5	3.5
Marital Status				
Married	76.9	78.1	66.7	76.9
Single	3.8	6.3	9.5	7.7
Widow/Widower	19.2	15.6	23.8	15.4
Main Occupation				
Fishing	14	50	22.7	30.4
Farming	72	26.9	18.2	8.7
Trading	29	0	40.9	26.1
Self Employment	0	3.8	0	4.5
Secondary Income				
Casual Labour	21	5	15	7
Transport	0	25	0	17
Remittances	5	20	4	15
Educational level				
None	31	19	9	4
Primary	42	44	25	35
Secondary	0	2	0	1

Source: Meroka, Patrick 2004

As indicated in table 6, most of the people in Mbunju/Mvuleni and Mtanza/Msona are said to be Moslems and the rest either Christians or animistic believers. None of the respondents said openly they were traditionalists.

In terms of age, the majority of the respondents were in the age of 19-40 years. Specifically these consisted of about 65% of the females and 63% of the males for Mbunju/Mvuleni and 77% of the females and 77% of the males in Mtanza/Msona. A high proportion of the respondents said they were married and large numbers were widows/widowers. The main occupation of women in Mtanza/Msona was reported as subsistence farming while for

Mbunju/Mvuleni it was farming and small-scale trade. The primary occupation for men was said to be fishing while farming was their main secondary source of income in the two study villages. Regarding formal education, the majority of the females and males interviewed in both villages had either no formal schooling or had only attained some primary education though did not necessarily complete the level. However, only less than 10% of the males interviewed had obtained secondary education. These findings are consistent with the general observation that fishing communities often do not attain very high levels of formal education as the young men join fishing sector before completing primary education. It was said that the fishing sector attracts young people as it generates money on a daily basis. There is high temptation for school children to terminate the day's lessons early or some do not show up at all in the school. The history of the family background contributes a lot in the education sector, as most local residents prefer to engage their children in the farm work or encourage them to look for livelihood strategies instead of going to school. Through personal observation the school children do not take their schoolwork seriously as the parents have less or no interest on their children's schoolwork.

6.8 Traditional Roles of Women

Examining traditional gender roles in the two study settings shows interesting observations. Women and men respondents in both villages indicated that the majority of the women before the commercialisation of the CPRs such as fisheries were engaged mainly in subsistence farming and household work. When the different responses were considered by gender however, more females than males felt that women's main occupation was household activities. Similarly, subsistence farming was reported as the main women's activity before the commercialisation of CPRs took place. This divergence in perception may point to men's lack of appreciation for women's domestic roles that arising explained by a number of possibilities. First these roles compared to farming are less visible to the "public eye" but second it could be the socialisation process that makes men to develop some kind of blindness towards women's domestic activities.

For Mbunju/Mvuleni village, combined male and female responses indicated that the three most important roles of women before CPRs commercialisation were household work, handcraft and farming. When opinions are sex desegregated however, more males compared to females considered women's involvement in fish smoking as a core women's role before the commercialisation. Curiously, women thought that their main occupation was household work as compared to men. Further, proportionately more men thought that women were

engaged in subsistence farming. This pattern of thought in Mbunju/Mvuleni is similar to what emerged in Mtanza/Msona only that fish smoking and women's engagement in fishing related work. Generally it was not considered significant indicating that traditionally women in Mbunju/Mvuleni village were more involved in fishing and fishing related activities before the commercialisation process other than those of Mtanza/Msona. It may be because of this factor that this same pattern emerges after commercialisation though other forces are discussed in later sections that also account for the phenomenon.

Information from key informants especially in Mbunju/Mvuleni village gives very interesting revelations. It is said that the migrants who are now the Majority in Mbunju/Mvuleni had a different gender division of labour. The Makonde though now mainly agriculturists and traders say were basically fisher people. A senior Makonde man and woman who were probably in their seventies reported that at the time their people settled in Rufiji both women and men in this ethnic group engaged actively in fishing. But there traditional activity fishing changed gradually from the 1950s due to political regimes changes and the government policies forcing this group to adapt to a new life. During the research time I encountered elderly women who narrated how they used to make fishing nets out of local materials. Today the Makonde women are largely barred from fishing directly by their spouses and are settled to peasant agriculture in the floodplain. The women said, however, their lineage traditions have been messed up due to recent changes in the traditional activities there is a chance in the flooding season to take active fishing with their husbands or in small groups of women from the village. This gives them an opportunity to teach the daughters the lineage traditional methods of fishing, which were common in the pre-independent time and the taboos attached to the resource for conservation and management reasons.

Today, as privatisation and liberalisation are in full gear, social reproductive roles seem to be taking a big toll on women. These roles include cooking for the family, looking after the home, raising children, fetching water, and doing the laundry, which together account for higher number of the responses in Mtanza/Msona as compared to less number in Mbunju/Mbunju. Women of Mtanza/Msona however engage more in subsistence farming as a household duty compared to women in Mbunju/Mvuleni. Other roles considered as women's household responsibilities by both men and women included trading Women's trading role in Mbunju/Mvuleni included selling vegetables in Ikwiriri. Trade involved brewing and selling local alcohol, trading in fish and operating food kiosks. Engaging in fishing as a household role for women accounted for a relatively small proportion for women's domestic roles in both Mtanza/Msona and Mbunju/Mvuleni. Though relatively more women in

Mbunju/Mvuleni compared to Mtanza/Msona were reported to have engaged in fishing as a domestic role.

As far as women's community roles are concerned, participation in women's organisations and associations accounts for 60% of women's community activity in Mbunju/Mvuleni. Some of these organisations and groups are for farming or pooling money that is rotationally given to the members of the group. The second most important engagement for women in both villages is local politics mainly in the village Council (VC) as the national laws of Tanzania guarantee this political representation. Outside this, women have few community participation opportunities some of which included trading/business, farming/rearing poultry and fishing. The fact that women as well as men perceived these economic and income earning ventures as household roles for women is very interesting and may point to the view that women's productive and income earning activities are often fused with roles that are reproductive and not remunerated. In short, women's work in the economic sphere is often perceived as an extension of their domestic roles in this coast region of Tanzania. There is a possibility that the cultural and religion values in this region do not recognise the women's contribution in the household as men are considered to be the main breadwinners.

6.9 Fishing related Work of the respondents

In general, the respondents mostly women said they did not do any commercial work related to fishing in Mtanza/Msona. For Mbunju/Mvuleni less women than men reported that they did not work related to fishing. In essence more women reported not participating directly in fishing in both villages but the men in this category were the majority. (See tables two below). It has to be noted, however, that Mbunju/Mvuleni has a higher level of commercialised fisheries than Mtanza/Msona. Thus in general one would think that commercialisation excludes men more than women. However to understand this point more, one needs to know what is meant by the term "fishing" in Mtanza/Msona and Mbunju/Mvuleni. For instance Bækgaard and Henrick (1992) in an article "When is a Fishing Man a Fisherman?" raise interesting issues. They point out it is not true that "where there is water there is fish" and "where there is fish there are fishermen." In their definition of fishermen do they not just refer to those who know how to fish but do so occasionally when it suits their needs of course as seen Bækgaard and Henrick may have not conceptualised fisher-women. However this is just an example that the understanding of fishing is not static and how a given community takes it may give rise to different responses. It is in this perspective that table two below which provides more details about the participation of women and men in fisheries activities after

commercialisation of the resource and privatisation of the sector in Mbunju/Mvuleni and Mtanza/Msona should be understood.

Table 7: Fishing Related work for women and men respondents

Village	**Mbunju/Mvuleni**		**Mtanza/Msona**	
Gender	Female (%)	Male (%)	Female (%)	Male (%)
Activity				
Fishing	0	80	0	65
Trading in fish	56	5	12	20
Fish processing	44	15	10	15
Total	100	100	22	100

Source: Meroka, Patrick 2004

As table two illustrates, in Mbunju/Mvuleni fishing (defined here to mean actual going to the lake to capture fish) is specifically a male domain accounting for 80% compared to 0% for women. Trading in fish, however, is largely women's speciality and this is mainly in various species and local residents have given the women trading in fish nicknames according to the type of species specialised in selling at the local market. In Mbunju/Mvuleni, however, more women than men reported carrying out more trading in fish either locally or do access the neighbouring markets in towns such as Ikwiriri and Kibiti. It was said that women fish traders hire men to do fishing for them but the respondent's fishermen refused to answer the claim but some posed questions since when women started hiring men to fish for them. However, those women who said hire men in this way believe that they actually do the fishing because the work done by men is paid for. Besides, many women in Mbunju/Mvuleni defined fishing in the focus groups to include all other activities related to fishing. They argued that since the fisheries sector is primarily in their local resident area, all the people in the area are fisher people. They elaborated that the food kiosks, shop keeping and all such businesses hinge around the fishing activity. This may therefore explain such a high number of women who reported their activity as actual fishing. The researcher's personal observation and experience concurs with the women's argument because most of the business premises in this village are active during the high season as cash circulation is higher as fish production increases compared in the dry season. The villagers experience a boom in business as non-resident fishers frequent the village spending much of their income on food and leisure. Even women who have nothing to do with fishing activities can make a living as the fishers scramble to show their bargaining powers by having sex with a lot of women. The storekeepers make profits as the basic commodities prices hike.

6.10 Community attitudes, cultural beliefs and practices

All the women interviewed reported that community attitude towards women's participation in fishing is negatively construed through the baseless rumours in the village. In Mtanza/Msona more men reported that women are highly discouraged to engage in fishing as the activity is too dangerous and the resource taboos forbid the women to enter into the waters in specific occasions. On the other hand, Mbunju/Mvuleni scenario is different and very interesting. Seventy six percent of the women interviewed and 68% of the men said community attitude generally encouraged women's participation in fishing because the generated income per day from fishing activity is higher than what a peasant can earn from agriculture after working for a couple of months. It should be noted though as earlier intimated that the term fishing in the two localities is understood differently and this definitely had an influence over the results.

Even with this observation, it is important to note that the community members in Mbunju/Mvuleni today is more supportive of women engaging in fishing activities in general than it was some two decades ago. The fact that this support comes from men as well is very significant in understanding how important it may be to organise support from both men and women in pushing for gender equality in resource management and use in communities, which were considered to be dominated by men. With regard to negativity, field results indicated that more men in Mtanza/Msona unlike Mbunju/Mvuleni felt that community attitude discourages women more from fishing. This divergence in understanding is revealing and shows how a people of different gender in the same locality bear different experiences on the same theme. The researcher's analysis concludes that Mtanza/Msona being more in the interior upholds still its traditional structure of division of labour compared to Mbunju/Mvuleni, which can be seen to have been transformed in the recent years through the social interaction of people with different social backgrounds. The closeness of the village to the Ikwiriri Town has given the locals an opportunity to get into contact with the foreign cultures, which have easily penetrated the local traditions. Today these foreign cultures have slowly taken root and the locals have accepted and integrated them in their culture. This combination of cultures has contributed to the opening of the Mbunju/Mvuleni people and now have different perspectives in their lives compared to people from Mtanza/Msona.

As far as men's participation is concerned, both villages' respondents indicated a strong supportive community attitude towards men's involvement in fishing. In Both cases all men interviewed felt that the community attitude towards men's participation in fishing was

positive. In short engaging in fishing activities is regarded a naturally God given activity for men and women's involvement is perceived in some sections of society as interference, artificial or foreign. It may be interesting to look at some of the reasons advanced for this community attitudinal position. Table 8 below highlights some of them.

Table 8: Attitudinal Views Regarding Women and Men's Participation in Fishing

Fishing is a men's job
A man can spend a night out fishing but this is hard for a woman
Men have fishing experience
Men represent women in actual fishing even if women have the capital
Fishing is a men's God given activity
Men can row boats but women are culturally prohibited
Women are considered to have bad omen in fishing
Husbands are the ones to assist their wives
Women can catch small fish
Women may make fish disappear especially when in their menstrual periods
Women used not to fish from old times, why now?
Women should only trade in fish but not go for actual fishing
Women should only sell smoked fish
Women's fishing breaks norms

Source: Meroka, Patrick 2004

As regards cultural beliefs, practices and gender, fishing as a sector is one area where the interaction of the three produces divergent but interesting perspectives. It matters also where one situates the analysis and the point in time where the analysis starts or ends. This partly arises from the fact that culture is not static and is often multifarious. The findings in general indicated that both cultural beliefs and practices existed in the two villages of study. However, the level of practice varied widely depending on the fisher-person's orientation and factors such as the depth of religious/cultural beliefs of an individual and the exposure to such practices. In the table below, some of the beliefs and cultural practices were reported by the respondents in the two villages separately.

Table 9: Cultural beliefs and gender practices in study villages

Views of women	Views of Men
You do not tell a fisherman to bring you fish because it leads to no catch. Women are not supposed to jump over fishnets and fishing gear. One is not allowed to hold fish by the tail. If it done you do not get a good catch. You are supposed to hold a fish by the head. Hens are sacrificed on the (especially new) boats and blood sprinkled, and local brew is splashed to get a big fish catch. You are not allowed to use soap and if it is done the catch is not good. Rituals are performed for new boats. Celebrations begin at home and are extended to the lake for good fortune. It is taboo for a man to quarrel with his wife before going to fish. It is bad luck and may lead to a low catch or death. Fish bones in a home of a fisherman are not disposed at night; it leads to bad luck and low catch. After supper bones are kept indoors. Women are not allowed to touch fishnets when they are menstruating. A fisherman does not say bye when going to fish because he could die there and a woman is not supposed to escort a man to the lake when going to fish. He may never return alive.	Women are not allowed to board a fishing boat otherwise you will not get a good catch. Men should not meet women on the way when going to the lake it is bad luck. You should not go fishing when you have quarrelled with anyone. When you go to the lake you do not bath until you return onshore. If you are going to the lake for the first time some fish bones have to be tied around your neck. It is taboo for a woman to be naked while on the lake. You do not send for something when you have set off for a fishing journey. There are areas on the lake where noise is prohibited as the spirits of bad ancestors may emerge and cause danger. When setting off you pick some sand from where the canoe you are using was packed and throw it in the boat for good luck. You do not greet any woman when you have set off for a fishing journey. Every time the fish catch is low, people have to consult the "ritual doctors". Speaking obscene words is not permitted on certain places.

Source: Meroka, Patrick 2004

A number of respondents, however, denied that taboos and cultural practices still exist or are practised, as it was the case in the past. The respondents said that the people in the region are religious and did not follow such things anymore and as you may note in the section on religious affiliation, every respondent identified with either Christianity or Islam. Indeed some people claimed that those who were strong in their Islamic and Christian faith just prayed to God for good harvest as well as good luck while in the lake. It has to be noted that research on traditional beliefs and practices is difficult since many of these beliefs and practices were demonised following the introduction of modern religions in the region. Today many people in both villages may not admit publicly to following traditional beliefs, however, some elderly

people find it difficult to denounce traditional religion, which is considered locally as the protector of mankind as well as the natural resources. To appear modern is something different and has nothing to do with traditional religion, which the local residents considered to have more values in their lives compared to modern religions, which were the strategies of the Arab traders and British coloniser to brainwash the locals for their own material benefits. Even then, it appears like the assertion that the fisheries sector is such a ritualised field is very true. Indeed these rituals though are said to be aimed at promoting the fish catch rather than discourage any one, actually hamper women's participation especially in the fish harvesting activities that are carried out on the lake. Under chapter 6.3 part of the resource taboos, which are expanded in the box above states clearly what the resource users are supposed to do in order to avoid the controllers anger and misfortunes while in the lake. No woman or even man would like to invite trouble to the person and community by breaking the norms and the fact that the lake is perceived and indeed is a dangerous area on account of the multiple accident related deaths that occur fuels the beliefs and the practices more. This however does not explain why women are more restricted than men but the truth might be the economic values attached to the fisheries today.

Table 10: Constraints faced by women in fishing

Village	Mbunju/Mvuleni	Mtanza/Msona
Gender	Female (%)	Female (%)
Constraint		
Market /Competition	41	7
Limited Capital	20	33
Theft and Cheating	15	6
Price Fluctuations	7	6
Taxes/Licence Fees	7	6
High Transport Costs	2	0
Poor Preservation Tools	4	0
Reduced Catch	4	3
Culture	2	46

Source: Meroka, Patrick 2004

Table 11: Constraints faced by men in fishing activities in the study villages

Village	Mbunju/Mvuleni	Mtanza/Msona
Constraint	Male (%)	Male (%)
Market/Competition	13	5
Limited Capital	11	23
Taxes	10	5
Low prices	6	7
Technological Changes	13	4
Middlemen	10	0
Safety issues	3	12
Theft	5	7
Low catch	24	23
Transport costs	5	15

Source: Meroka, Patrick 2004

The table below illustrates the benefits from the fishing sector in Mtanza/Msona and Mbunju/Mvuleni as a result of commercialisation of the fisheries.

Table 12: Benefits gained due to commercialisation of fisheries

Village	Mbunju/Mvuleni		Mtanza/Msona	
Characteristics	Female (%)	Male (%)	Female (%)	Male (%)
Employment/income	10	25	7	15
Investment	7	17	5	12
Education	5	12	5	23
Nutrition	18	20	14	9
Marriage/Leisure	3	17	2	14
Cloths	27	2	12	22
Household facilities	28	3	7	10
Rituals	2	4	4	6

Source: Meroka, Patrick 2004

6.11 The Losses through commercialisation of fisheries

In Mbunju/Mvuleni, most of the respondents that is; 29% of the women and 28% of the men felt that the greatest community loss resulting from the commercialisation of the fisheries

sector are “capital flight.” They argued that most of the revenue generated from fishing is not reinvested in the area or at the fishing sites. It was argued that lots of fish was smuggled across the regional border to urban centres to the detriment of local community development. In Mtanza/Msona 11% of the women and 19% of the men also reported this lack of local reinvestment though it was not named as the most important loss as the activity is not well structured like in Mbunju/Mvuleni.

For Mtanza/Msona 37% of women and 29% of men named irresponsible fishing habits a view advanced by (Bangura 1994). This irresponsible behaviour involves the use of undersized and restricted fishing nets and gears as well as general increase in fishing related crimes, which were seen as the most important community challenges and losses resulting for the new commercialisation situation.

In Mbunju/Mvuleni it was indicated that the availability of ready demand for whatever quantity of fish brought coupled with the need to make “quick” money contributing to the escalation of conflicts related to resource use and management. In Mbunju/Mvuleni only 6% of the men and none of the women respondents named this as a problem. It appeared therefore, that the more the fish was commercialised the more the incentive for using non-recommended fishing gear and generating fishing activity related crimes.

Another important loss named in both Mtanza/Msona and Mbunju/Mvuleni resulting from commercialisation of fisheries is the deteriorating food security and poor nutrition. This was cited by 24% of women in Mbunju/Mvuleni and 21% of women in Mtanza/Msona and 20% men in Mbunju/Mvuleni and 19% of men in Mtanza/Msona.

Indeed observations especially in Mtanza/Msona indicated booming trade in wild meat was in the increase in the area because fish, which was considered more nutritious, continued to decline and is unaffordable to many households. For instance a Kilo of wild meat was about 500 Tanzanian shillings in Mtanza/Msona but the price of fish was double as much. Other types of fish such as the popular tilapia in Mbunju/Mvuleni was found being sold almost at prices that were equivalent to those in Dar Es Salaam city markets and the available stocks often cleared very fast. Buying fish at the landing sites was beyond reach for many people leave alone the fish being hard to obtain hence making the residents to resort to substitutes. In addition, 10% of women in Mbunju/Mvuleni and 12% of men cited increased levels of poverty in both villages as the other losses.

One of the most important losses to women was cited as decline in nutrition derived from fish for household use. It was also noted that commercialisation of fishing has increased cheating

and theft of fishing materials. Women indicated that they have suffered from competition resulting from the increasing number of more sophisticated actors in the sector and the household vegetables is lacking has the catch is transported to distant markets. Spouses also go missing either due to prolonged engagements on the lake or even die to accidents or natural causes or HIV/AIDS leaving many to shoulder extra household responsibilities. Prolonged absence of spouses has also led to escalation of sex work as women left for long find other partners and men who stay away for long develop sexual relations with other women in the fishing camps.

6.12 The roles of gender on fishing sector in study villages

Apart from analysing the effect of commercialisation on the roles of women and men in the household and the wider community, the interest was also on the effect of commercialisation on the roles of women and men in the fishing activities. It is this that is discussed below.

With commercialised fishing, the majority of women and men reported that the main roles of women in Mbunju/Mvuleni fisheries today are trading in fish and fish smoking. Eight percent of the respondents indicated sun drying as another women's role. Women are still tied in trading fish species and varieties that are not currently highly demanded in the global market. These include smoked tilapia and smoked immature and undersized Alestes stuhlmanni, or sun dried Kambale (Protopterus aethiopus). About 10% of the men and women reported that women's other role in commercialised fishing is selling cooked food to fishermen and operating kiosks, which are jointly owned by local resident women.

Similarly, in Mtanza/Msona most of the women are engaged in fish smoking and small –scale fish trade at the local village market. Others are engaged in selling backed food, running some kiosks, which is either a family property or belongs to the women's group. However, the women in Mtanza/Msona are involved in fishing sector the profits made are less compared to the women of Mbunju/Mvuleni the reason being Mtanza/Msona is far from the regional markets but Ikwiriri provide a ready market for the Mbunju/Mvuleni fish traders.

The table below shows women's roles in fishing sector in Mbunju/Mvuleni and Mtanza/Msona today.

Table 13: Women roles in fishing

	Mbunju/Mvuleni	Mtanza/Msona
	Female (%)	Female (%)
Trading in fish	47	29
Fish smoking	29	37
Sun drying	6	11
Food kiosks	10	9
Other	2	3

Source: Meroka, Patrick 2004

6.13 Effect on Men's fishing Roles

Today, in the commercialised fisheries in Mbunju/Mvuleni, men predominantly participate in actual fishing, fish trade and transport reported all respondents interviewed. Some men were reported to be engaged in fishnet repairing and boat making or repair reported all the respondents interviewed. Forty six percent of respondents in Mtanza/Msona indicated that men are engaged in actual fishing and others are in transport. Men were also observed repairing boat as well as selling items related to fishing sector.

Table 14: Men's and women's coping strategies

Village	**Mbunju/Mvuleni**		**Mtanza/Msona**	
Gender	Female (%)	Male (%)	Female (%)	Male (%)
Coping Strategies				
Forming Groups	8	5	10	7
Partnerships	8	8	19	11
Farming	25	14	6	0
Transport	6	14	0	2
Change Business	25	22	6	15
Logging	0	15	0	15
Hunting	0	20	0	45

Source: Meroka, Patrick 2004

The table above illustrate the coping strategies, which have been developed by both women and men in the study villages. The problems facing the main livelihood strategies have forced the actors to find alternatives in order to support the household needs. It was reported that the instability of the prices in the main activities combined with the decline in fish stocks as thrown the actors into confusion economically and many have resulted to the above given strategies for survival reasons.

6.14 Local perception of fish stock change and conflicts

The fresh water fish species were named in the focus groups and giving local species family names. The focus group named and ranked the fish according to its demand and consumption. In the focus groups the fishers were asked reasons, which have lead to changes in fish species stocks in the Lake of Uba and Mtanza for the last ten years. How this has affected their own catches and their attitudes toward those responsible for managing the fishery, i.e. the fisheries officers that propagate and enforce management measures and the scientists that identify what measures are needed and third, their thoughts on specific measures. The discussions in focus groups targeted local fishers who had fished in the two lakes for the last ten years. The figures in table two reflect the views of the fishers on the fisheries species decline in Lake Uba and Mtanza

Mbunju/Mvuleni

Table 15: Fishermen estimating the change of fish stock in Lake Uba

Change of Fish Stock Species*						
Ranking of Resource Status	Extreme Declined	Declined	The same	Increase	Increased a lot	Total fisher
Fish Species						
Cichlids (Kumba)**	5	2	0	1	1	9
Sarotherodon (Perege)	2	1	0	0	1	4
Clarias (Kambale)	1	2	0	1	0	4
Lobeo (Ngocho)	2	1	0	0	0	3
SardineAlestes (Ngacha, Beme)	4	2	0	1	0	7
Bagrus spp catfish (Mbufu)	1	0	0	1	1	3
Total fisher	15	8	0	4	3	30

Source: Meroka, Patrick 2003

* For the last 10 years in lake Uba

** In brackets are local names for the fisheries species

The result represented in table 15 was from the data corrected and analysed after 30 fishermen from Mbunju /Mvuleni who were selected randomly from the list, which one of the fisher composed. These 30 fishermen in Mbunju/Mvuleni village represented 20.25% of the total fishers who regularly have access to the fisheries in the lake of Uba. From the total number of

the fishermen who were interviewed only six of them were local residents from Mbunju/Mvuleni village and the rest came either from the highlands or the neighbouring commercial town Ikwiriri.

The interviewed fishermen were 30 years old and above. The study targeted this age group as it was considered to be the most active group in fishing. The fishermen were first instructed on how the questions were to be answered but there was no influence on the ranking of the changes, which have taken place in this lake of Uba. The research categorised the changes of the species in four subsets. The ranking of the changes was done in descending order from extremely declined, declined, no change, increased and increased a lot. It can be said that the ranking was to assist the researcher to know which type of fish species has been over harvested in the last ten years and what the reasons are for the decline of this particular species. The ranking supported the qualitative information, which was collected in the pre-survey trip in the village.

The fishermen were regrouped according to the fish species and the questions asked were directly on particular specie. There was control of the fishermen not to interfere with the interview through internal influence. The interview was done on the same day to avoid biases on the data. The fishermen were not allowed to discuss openly with each other but had to indicate their opinions on papers, which were collected immediately. Interestingly the local residents from Mbunju/Mvuleni were spread in the five groups and acted as the group leaders; however, the researcher's assistants controlled and monitored the whole process.

In Mbunju/Mvuleni village 15 of the total fishermen interviewed recorded that all the fish species have declined drastically in the last 10 years. Eighty fishermen felt that the fish stock has declined while four said there was increase in fish stock. It was only three who indicated that the fish stock had increased a lot. It was difficult for the fishermen to decide whether the fish species had changed or remained the same. The same indicated that fishermen were not sure whether the species had changed or not and no answers were given in this respect. The same was to test whether particular species have disappeared from the lake in the period investigated. The numbers presented in table 15 reflects that the fishermen in Mbunju/Mvuleni felt that the fish stock has changed in terms of species as well as magnitude. The highest fish stock changes have taken place on cichlids (Kumba) and sardine-Alestes (Perege), according to the fishermen's views in the last ten years.

The fishermen said these species have been over fished because the local villagers prefer to eat them because of their rich fat contents as compared to other fish species and have a high

demand in the urban market hotels. The fishermen were asked if the local people's eating habits are influenced by cultural beliefs attached to these particular species. It was said the cultural beliefs are still important among the elderly people who eat particular fish allowed by their lineage norms but this is no longer an issue for the young generation, which is market economy orientated. The market values and changes in prices have influenced the fish stock in the Lake of Uba in the recent years claimed a local fisher. The economic consideration does not correspond with the biological response of the resource today. The fish stock changes in this lake have contributed to individual fishermen behaviour, making it difficult to co-operate for better management. The fishermen said co-operation existed among the fishermen when this lake was managed by the local leaders from Mbunju/Mvuleni village alone. These leaders were enabling to control the fishermen's activities in the lake as the customary by-laws were applied to limit the excessive extraction of fish by the fishermen. The returns were higher and that is why the fishermen co-operated to defend their fishing grounds. The complexity of fishing came into being after the lake was declared a government property and nobody was allowed to restrict the external resource users well as the local access to the lake. The fishermen said some individuals started cheating through illegal fishing using small mesh size nets while the others were committed to the local appropriation rules discouraging fishermen from using such nets and other cruel methods, which are destructive to the resource. However, the eating behaviour seems to have an influence on the fish stock in the old institutions as the resource management was attached to the lineage customs. The market economy today has spared nothing as many of the regular fishermen are obeying the market demand but not the culture, which favoured the subsistence consumption in the past. In the focus groups fishermen would disagree about both the causes of changes in catch rates and the depletion of particular species and whether or not anything could be done about them. Some believed that these changes reflected the work of super natural spirits, which are recognised as the master of the water against the human wishes, which are dominated by personal gains. Most of the fishermen feel that human beings are the prime agents of fish depletion in Lake Uba as well other permanent lakes in the floodplain today.

One interesting comment was that it is impossible to predict what will happen with the fish in the future because the state could introduce a new species in the lake. Fishermen, who had been catching particular species for more than ten years or who had shifted to another species, were asked about changes in their own catches. Those who have shifted to other species accepted doing so for survival reasons. Several different fish species in the lake of Uba are intensively exploited to meet the increasing needs for protein supply in the floodplain

households or to be exchanged for cash. The requirement of proteins is rising exponentially with the rapidly growing population through natural births and seasonal or permanent immigration into the floodplain today. The fishermen's argument on resource depletion is connected to the state of poverty the people in the floodplain are facing today. In recent years many of the households had been forced to change their main livelihood strategies because of climatic and national policy changes. These changes culminated to the consumption behaviours and the poor rural households often deriving a significant share of their income from the CPRs today. The breakdown of traditional agriculture and shortage of cash flow as explained in chapter five have contributed to the pressure the fisheries are facing in the floodplain. The fishermen said the rural people have become dependent on the CPRs, which are within the village boundaries and sometimes when demand rises, the villagers are forced to encroach the neighbouring village's lakes.

The changes of the most preferred fish species have forced many households in the floodplain to consume other species, which were either spared before by traditions. However, religion and culture of these ethno professional groups in the past strictly forbade the consumption of particular species of fish, which the lineage taboos were against or considered as totem the continued decline of the preferred species has left the local population with limited options. The spread of Islamic and other religion in the floodplain as well as the urban demand of fish have contributed to the continued decline of particular fish species in the lake. The local cash flow determines the size of fish the villagers could afford to eat, which was not the case in the past. Before the breakdown of major income sources like agriculture, the local people had no problem to get fish. The impact of cash shortage in the region has forced many households to buy small fish because the big ones are expensive for their limited income. The villagers prefer to buy small fish because their purchasing power cannot support the costs of big fish, which are then packed for export or sold in the urban regions. This has contributed to the change of fishing nets in the floodplain lakes to meet the consumer's needs. The fishermen were quick to defend themselves against the use of small mesh size nets, which are outlawed for fishing as they are destructive. The small mesh size nets started recently, recalled one of the fishermen, when the government imposed taxes on the fishing implements and the shortage of cash at the household level, forcing many fishermen to go against their traditional ways of fishing and worked according to the current market demand.

The fishermen were asked how this threatening situation could be improved locally to protect the diminishing of the fish stocks in the lake. The fishermen unanimously said collective action in resource management was the only option now available to reduce the daily

increasing pressure on the resource. Through collective action, the individual behaviour of the fishermen and rational thinking could be controlled and the fishermen be forced to work within the recommended fishing rules. The current behaviour of the fishermen has contributed to unnecessary conflicts between the local ones and those from neighbouring villages as the competition for the resources rises. They regret all this has happened because the resource users have no common goal on how access, monitoring and regulation could be done to meet the requirements of all fishermen to avoid competition on extraction. Lack of implementation of the fishing rules by the fishery department has opened room for greedy fishermen who have manipulated the situation and are now destroying this valuable resource for selfish gains. The change of economic conditions and state policies at the macro level have affected the livelihoods, which the rural people depended on in many years, forcing them now to overuse many of the renewable and non-renewable resources, but especially those considered as open access locally. The changes in the main economic strategies are locally considered as the main driving force for resource mismanagement in this region of the floodplain. The government institutions are not functioning as they used to due to limited human resources and lack of financial support from the government. The stretched government budgets do not cover all the departments' costs effectively and that is why many of the institutions are poorly equipped as the state is not able to maintain its human resources for the efficient administration.

The fishermen feel the management of Lake Uba fisheries is in a critical condition and needs to be restructured to prevent a collapse in fisheries, local economies and the degradation of the environment. The new management strategies are important to cater to the interest of all stakeholders in this lake; otherwise the problems facing the resource today will never be solved. The decline of the resource is connected to the open access, disrespect of the resource taboos, lack of strong institutions, corruption and continued export of fish, which have challenged conservation of the resource as the market demand has increased the continued over exploitation of the fisheries in the lake. The shifting from beef and game meat consumption has added more demand to the fisheries and that has expanded the markets of the resource attracting more traders as well as consumers. The fishermen from Mbunju/Mvuleni village commented that 20 years ago the fishermen did not overcrowd the lake, as there were other means of generating income. Fishing was left for particular lineage members, who were locally known for their fishing activities through their lineage history. What could be seen in the lake today is related to the opening of the lake to the external fishermen and emergence of new markets in the region, which are now dominated and controlled by long distance traders. These traders have increased the market value of the resource forcing many locals to change

their former livelihood activities and now have joined this lucrative business; however, many are doing it for economic reasons. Lake Uba is easily accessed by fishermen from other regions as this lake is well connected to the main road making transportation of the resource easy and cost effective as compared to other areas, which are further interior than Mbunju/Mvuleni village. Jansen (1997) reveals that the export of fisheries affect the traditional fisheries and different groups of people who depend on them at different levels, that is, individual household, community, national and international levels.

It emerged in focus groups that the traditional system of fishing gears were operated by the locals has been replaced by strong gears of the absentee fishermen with large capital investment. The fishermen prefer to supply or sell their catch to urban traders whose prices are better than their local consumers. The liberalisation of the markets and the improvement of infrastructure linking the urban centres have caused a major trend in fishing sector in the last ten years. Part of the fishermen sees their actions and climate as the main cause of changes in the species' composition in the lake and has contributed to their depletion due to lack of co-management. The co-operators are disadvantaged since selfish fishermen who free ride on their efforts, can invade them. The local fishermen from Mbunju/Mvuleni find it hard to step back from the lake while the fishermen from Ikwiriri Township can continue to access the lake on their expense. To solve the problem, free riding will reward all the fishermen at the expense of the resource. The blame on the fishermen's behaviour is part of the problems facing the fish management but other factors such as corruption and bargaining powers carry weight on mismanagement of the fisheries.

The fishermen said that in the pre-colonial and colonial times fishing in the lake was traditionally organised and the resource was abundant and the residents had enough for their subsistence needs. The elderly fishermen in the focus groups, who said their fishing techniques were inherited from the grandfathers, condemned the states' action towards the dismantling of traditional institutions, which managed the resource for the lineage members for home consumption but not for the market as it is the case today. This group went further and discussed the importance of the fishing rituals, which the lineage leader had to organise before the fishing was done either in the river or lake.

These fishing rituals have been abandoned and the results are practically seen through regular accidents in the forest or in the lake. It is not only the accidents that are evidence that resources such as fisheries and wildlife have reduced in the last years. The fishing ritual hardly takes place today as the young fishermen oppose its function as well denounce

collective fishing but prefer individual or small groups, which is considered to be a fashion today and is connected to development. The young fishermen have no respect towards the elders and hardly listen to their own parents on resource use and conservation. The transformation of the local institutions to state institutions eroded the bargaining powers, which the local elders enjoyed in administration and conservation of the natural resources in general. The economical constraints and personal desires have increased the pressure on the resource contributing to over exploitation. The dependence on the fish resource for food and cash, especially in the hunger period, has depleted the fish stock in the lake.

The lake taboos, which existed in the traditional institutions are today violated as many of these young fishermen are in a hurry to make profits but are unaware of their impacts to the resource and other dependants. The lake taboos are quite strong and once violated the resource is held back by the super natural spirits without giving a warning. The accidents in the lake are a discipline from the spirits, which are the owners of the waters and the controllers of the resource. Today the young fishermen do not follow these taboos while fishing in the lake and that is why the resource has reduced drastically and many of them continued to die in Lake Uba, said the ritual specialist. The only way to reduce these accidents in the lake is through rituals to ask for forgiveness and the super natural spirits will hold the accidents in the lake. The crocodiles and hippos will take a rest and the fishermen will continue with their daily activities and the stock of fisheries will increase again, said a fisherman.

The local fishermen complained about the missionary's teachings that God provides, but failed to teach the locals anything about proper management of the resources and the consequences of mismanagement of the resource, which they had depended on for livelihood for decades. In other religions like Islamic, conservation and proper use of natural resources is recommended to the followers and it is said that Allah would punish those who went against the teachings on proper use of the resources. Rapport (1967) reveals in his report the functions of religion on natural resource management. In his comment, religion makes the management of the natural resources cost effective and reduces the costs of monitoring, as it bids the lineage members who support the lineage leaders wholeheartedly in the management and regulation.

The local fishermen blame politics on the problems facing the common property resources in the region as well other parts of the country. The change of political regimes in the country continues manipulating the management policies of the natural resources to suit the demands

of those in power. These policies have changed without offering alternatives to those dependent on these natural resources for their livelihood. The top-down management has affected the livelihoods of the rural people whose lives depend on the extraction of the CPR.

The government strategies to bring development through the exploitation of the natural resources has affected many people's lives as these natural resources are now the government property and accessing them is only through the possession of the licences. Through this development agenda, the locals have been denied their basic necessities and some groups have turned against the government institutions for survival reasons. The expectation of the local people in the independent government was poured in the cold waters as the control of the common property resources remained in the hands of the central government, as was the case in the colonial government. The promises given by political leaders become a passing cloud as the political goal posts continuously shifted and the policies failed to identify the role and needs of the local people in the new government other than being the citizens of Tanzania.

The fisheries in the floodplain lakes and the rest of the country ceased as common pool resource when the state institution took over the management, leaving the lineage leaders powerless in resource management. The traditional institutions controlled access, monitored, sanctioned and regulated but all these duties were transferred to the newly constituted village council under the control of the village chairman. The lineage people lost control of these crucial resources in the 1970s, when the government dismantled the territorial clan boundaries and consolidated the scattered hamlets into Ujamaa villages. The customary tenure on the resources was replaced with the formal state ownership and the office of the President became the controller of the all natural resources including land in the whole country.

The new formal policies left the rural communities with limited livelihood strategies, which turned out to be insufficient for the large population to survive on. The negligence of the state towards the floodplain resource tenure has provided room for the stakeholders to develop a de facto open access system. The establishment of fishing rules was based upon the perception that an inland lake is a communal property of the landholders living in the surrounding region. However, this customary property system had changed to another layer of institutional arrangements that have been observed with confrontation over appropriation of natural resources.

Mtanza/Msona group

Table 16: Fishermen estimating the change of fish stock in Lake Mtanza

Change of Fish Stock Species*						
Ranking of Resource Status	Extreme Declined	Declined	The same	Increase	Increased a lot	Total
Fish Species						
Cichlids (Kumba)**	7	2	0	1	1	11
Sarotherodon (Perege)	3	1	0	0	0	4
Clarias (Kambale)	1	2	0	0	0	3
Lobeo (Ngocho)	3	2	0	1	0	5
SardineAlestes (Ngacha, Beme)	2	2	0	1	0	6
Bagrus spp catfish (Mbufu)	1	0	0	0	0	1
Total	17	9	0	3	1	30

Source: Meroka, Patrick 2003

* For the last 10 years

** In brackets are local names for the fisheries species

The fishermen in Lake Mtanza of Mtanza village were selected randomly like the case of Lake Uba from. The 30 fishermen in the lake of Mtanza represented 50% of the total fishers who regularly access to the resource. The number of the fishermen interviewed was the same as those from Mbunju/Mvuleni village in the central floodplain. Although the selected number of the fishermen was the same, the results were different. The equal number was meant to make the analysis in both cases easier and comparable to avoid doubts on the information collected. The interviewed fishermen were mainly from the Mtanza/Msona village and have known each other for many years. However, a small number of the interviewed fishermen had migrated recently to the village but did not influence the results a lot. The 30 represented the whole team of fishermen having access to the resource in this Lake of Mtanza regularly. Prior to collective discussion, they were put into five groups of six people. Each group was given the same questions to answer but was not supposed to discuss openly. The field assistants monitored the exercise closely and the written results were collected and analysed immediately. From the five groups, the results in table 16 reflect the opinions of the fishermen on the fish stocks in Lake Mtanza today.

More than 20% of those interviewed from Mtanza/Msona, felt that the fish stocks in the Lake of Mtanza had declined drastically, while 15% indicated a decline. The first and second ranking of fish stock in this lake reflects that the resource has declined within the last 10 years. The ranking was to measure how the local knowledge could be applied to detect the resource decline locally as compared to the conservationist's models of resource measures. The fishermen in focus groups were asked how they knew that fish stocks had changed in the last years. This was the point, which regrouped the fishermen, according to the type of fish species each one extracted from the lake.

The largest group was on cichlids (kumba), which many people like to consume has it contains much fats. The response on this species was that it was hard to get it in the lake of Mtanza because it has been overharvested in the recent years. The other evidence given for the overharvesting of this species is the protection of the lakes in the Selous Game Reserve, which the local fishers used to access when the size of the fish in the Lake of Mtanza reduced and the fishers were to shift to the Lakes in the Game Reserve. It was said the prices of Cichlids (Kumba) are higher as compared to other species that is why many fishermen go for Kumba to make good profits. The restocking of this specie has gone down as all the mature fish has been taken out of the lake and no time is given to reproduce. The high demand has overcome the reproduction, affecting the growth of this specie in the lake. The group, which discussed on this specie, said many people are changing their eating habits, as it is rarely available in the lake today. The specialisation on one specie extraction in the past made other species available to the other groups and that lessened competition in the lake.

Today the random fishing has contributed to the decline of certain species forcing the fishermen to extract whatever falls on their nets for economical reasons. Nobody is ready to spare what formerly was considered to be a totem in line with lineage customs. In the old traditions customary regulation for access to water and water resources checked their indiscriminate use. Rules regarding restraints on resource use were embedded in cultural and traditional religious systems, which gave them a legitimacy that goes beyond scientific prudence. The fishermen said the resource in this lake is depleting, as the locals are dependent on it as vegetables on daily basis.

The fisheries from Lake Mtanza are for local household consumption compared to fisheries from Lake Uba, which are harvested for the market. The unfavourable environmental conditions in this village in particular, have left the locals without any alternatives other than to continue exploiting the resource for survival reasons.

"The lake is our vegetable garden provided and protected by our ancestral sprits in this village that is why you can see many people accessing it every day for vegetables". In this village every meal is accompanied by a piece of fish and our children are used to that system and the changes in fish stocks affects everybody in this village including the fishermen."

"The soils in this village are pure sandy, hardly support growth of green vegetables which would have been an alternative for household consumption. There were fewer people in this village 20 years ago and now we are almost double and that means more resources are required to feed these growing population. Consumption has increased in every household and we expect it will continue but the resource is declining."

The villagers are worried about the continued decline of the resource in this garden (lake) and discussions on fisheries take a low profile as elderly villagers are somehow reluctant to talk openly to foreigners on issues affecting the resource. It was said the large numbers of people in the village are below 15 years old and their income is generated from this natural garden and many of them do not understand the problems facing this lake. Today traditional knowledge systems and practices are not only known for the diversity of species used, but also for the diverse ways in which those species were administered in the past. Traditional knowledge is not only a cerebral activity; it is bound up in practical activity and technological systems, reflecting both collective and personal experience and long-term observations. It used to be passed down through generations as a composite whole in the form of myths, account of activities representing a people's historical experience and aspirations.

The social process of learning and sharing such knowledge, which was considered unique by each lineage culture, lay at the very heart of its traditions. And in this way, knowledge was owned and shared collectively in every lineage, while each member of the community was valued for the particular innovations and interpretation of the world. Many local communities developed traditional calendars to control the scheduling of fishing activities, believing for example, that phases of the moon are linked to periods of rainfall or floods. Through such interpretations, the local communities learned to cope with climatic seasonality by using weather indicators.

The disappearance of this traditional knowledge has an impact on resource management today. Although this village is more or less homogenous in composition, the locals have to blame themselves for the decline of the resource in the lake. The closeness of the village to the lake makes it attractive to the village fishermen while the distance to the nearest ponds discourages them and prefer to fish in Lake Mtanza. The household work for the women in this village gives them no chance to move down to the lowlands to search for wild vegetables

and the men have to bring fish in case. In the wet season the women can collect wild vegetables in the floodplain as the preparation for food crops planting starts. There is a possibility for the households to be supplied with wild vegetables throughout the wet season but the distance discourages the collectors who have to travel through the forests, which are considered dangerous before reaching the floodplain. The presence of the wild animals in these forests scares the women and the only source to feed the family is fish from the local lake.

The interviewee said towards dusk, the men disappear shortly to the lake to pick the vegetables while their wives continue preparing for dinner. The household members are only assured to have dinner once the breadwinner is back with vegetables from the lake and our people are used to this system every day. It was noted that the work of vegetable supply and maize flour to the household is the work of men. In the case of Lake Mtanza, the fisheries stock will rejuvenate, if residents develop vegetable supply alternatives and shift from the dependence on fisheries as the only source of food, said the local residents. It will be of no value, if drastic measures are taken to conserve the resource and yet the residents continued harvesting it.

Before any approach is taken to conserve this resource, the locals have to be given alternatives of vegetables supply, otherwise to force them to accept unworkable rules will be a waste of time and energy. Our source of vegetable (fish) needs protection, otherwise our grandchildren will curse us in the future because of the way things are, and this lake will be exhausted one day. The interviewed commented there is a possibility for the residents to co-operate in the management as they know each other's behaviour in the village but collective responsibility and accountability is needed to control the access to the resource. If we wait for the government to organise us, many issues might be overtaken by events. We know our problems and that is why collective action in the management is important for the benefit of all villagers. The government is only interested in assisting where it benefits and there is a possibility that those in office might have gone on holiday but we are still waiting for their help.

The government used to collect tax from the fishermen sometime back and that is the time Bwana Samaki (the fisheries officer) used to come once to collect what belongs to the government. These days we have never seen him and most people are saying that the state pulled out because the business was not profitable. But the truth is our government is not able to keep Bwana Samaki (fisheries officer) in the office due to financial problems. Unless

assistance comes from abroad, our government's revenues alone will never manage to solve problems facing fisheries and other natural resources in the country. These people you see here can make the mountain fall or can support it, depending on their personal interest. The government policies have become poisonous to the livelihoods of the local people. We are not consulted when such policies are crafted but we are always taken by surprise through events and that is why the government and its associates will never win to conserve natural resources unless the rural people are involved. We used to be the direct beneficiaries of these resources before the government changed the management policies, which pushed us out of the management of the resources, on which our grandfathers depended, for their livelihood much of the resources were in good health. The new state policies are arrogant and discriminative as the rural population's needs hardly appear on the priority list while the decision-makers are planning for the state departments. The fishermen concluded it is necessary to revisit the traditional knowledge on the resource use and conservation in order to inform the young generation the importance of such information to their lives. This will materialise once the locals alone come up with a list of issues affecting them and craft by laws, which will meet local support otherwise the implementation process might be oily for the actors to push through the project concepts.

6.15 Conflicts related to resource access and use in Rufiji floodplain

The social relationship between the ethnic groups is due to the hidden obvious conflict of interests between these stakeholders. The closer social relationship between them makes engagement in an open conflict very costly since it affects the long-term cultural, economic, and political commitments between the groups. Here are some of the conflict cases over the appropriation of the floodplain system in which different hamlets violate the common understanding related to the so-called community based management of the floodplain resources.

The conflicts were observed in the study villages during the field study in the Rufiji floodplain. For each conflict case, is the information obtained directly through personal observation and from non-structured interviews with village members.

Case 1: **(Mbunju/Mvuleni)**

An outsider was spotted fishing in the tributary near a community farm. A group of villagers from (Mbunju/Mvuleni) came and told him to leave the area. As the fishermen tried to exchange words claiming rights of access and swearing not to abandon the fishing spot, the villagers moved closer to him, confiscated his fishing net and destroyed it on the spot. They

accused the outsider of misconduct and disrespect of the laid regulations of access into private fishing points. When he vowed to mobilise his group and come back to the same point, the tempers of the villagers flared and he was disciplined. The villagers caused him physical harm. A week later, one of the villagers was caught in Ikwiriri by the external fisherman's group, and received a beating until the police came to his rescue.

Case 2: **Mbunju /Mvuleni**

The highland is semi-arid and not suitable for cultivation. The area is economically used for animal rearing. In the dry season, the highlands pastoralists find their way to the floodplain in the lowland to feed their cattle. The pastoralists use the floodplain as a rescue place for their animals. The pastoral local norm says that cattle should be set free while cultivators must fence in their garden in order to avoid any damage by cattle. The peasants have been having problems with cattle owners and continued cases have been reported to agricultural and livestock offices. The livestock officers have set rules to protect the agriculturist. The rule is that cattle owners must pay damages caused by the animals. However, it is hard to prove whose cattle invaded the crops and the damages remain unpaid or the cattle owners meet the officers privately and the case is solved without the consent of the agriculturist.

The agriculturists are doubly affected by having to spend much of their time to monitor the movements of the wild animals and the pastoralists and by being more susceptible to crop damage. The villagers are threatening the pastoralists' community, which came to the area recently. The conflicts between the farmers and the pastorals community have led to death and loss of property in the area. In 2004, one Barabaig was found dead on the side of the road, but the cause of his death was connected to alcohol. The police took some villagers for questioning but all of them came back. The villagers are aware of what happened to him but nobody wants to tell the truth. The hatred between the Barabaig and the Rufiji farmers is unmanageable. The state officials are somehow responsible because of double-dealing.

Case 3: **(Mtanza/Msona)**

The communities in the floodplain have co-existed with the wild animals for many years. Although they fit well into the system, the conflicts between humans and animals in the floodplain are everyday discussion. The hatred between the villagers and game wardens has caused crop damages and each party is pointing an accusing finger at the other. The community has resulted in making secret traps to kill the animals. The communities bordering the famous Selous Game Reserve have complained to the government on damages caused by

the wild animals but nobody listens to their grievances. The wild animals are said to have caused poverty in the region.

In the pre-Ujamaa time, conflict resolution in the Rufiji floodplain functioned because of the well structured set up of conflict resolution mechanisms. The traditional institutions were in place, which solved conflicts amicably through elders, traditional leaders, and healing and reconciliation rituals. The traditional techniques were not a one-day event, like the signing of a peace accord after battle. They took place in series, building on and affirming peace symbols with rituals related to the community's experience and memories handed over from the past generations.

Formerly, local traditional leaders were responsible in conflict resolution and young people were not allowed to sit in the counselling meetings because they were considered as troublemakers. The lineage leader summoned his council of elders and was to consult widely before any decision was reached. Traditionally, peace concepts and symbols were applied in conflicts resolution and any member going against them was bound to pay a fine or to be cursed by the elders. The community used to support the lineage leader and his council for peace keeping and unity.

When people used to make peace in the old times, they had to sit under the shade of a specific tree. But before they sat, each of them had to drop all dangerous objects and had to proceed to the tree to begin the negotiations. When there had been a murder in the clan or within a group, the group's meeting took place under a dead tree because they were discussing something very serious. Under traditional institutions, persons in conflicts appeared before the council of elders who patiently listened to each party and cross-examined them in order to establish the root causes of the conflict and the guilty party. After a time consuming scrutiny when the guilty party is found, the prescribed therapy must lead to harmony and peace. An animal is sacrificed and the blood sprinkled on the shrine of the god of truth and reconciler.

A traditional expert in rituals does this. These two parties were required to share meat and eat from the same dish and drink some traditional beer from the same calabash, a symbol of total reconciliation.

Today under the new state institutions, conflicts are solved through civil laws. Before the cases were channelled to the higher courts and the village government tried to iron out the differences between the actors involved. However, because of mistrust between the village government officials and the villagers, conflict resolutions took long, involved a lot of money and were ineffective. The judiciary is highly manipulated and only the rich can win cases

through corruption. Many of the reported cases in the area have taken more than one year to be solved and even some of the witnesses have died. Many people have tried to solve cases out of court because there is no transparency in the civil courts. However, many cases can be solved locally. The village governments prefer the Ward executive secretary to deal with such cases because of legal competence he might be exposed to. The state has developed institutions to solve conflicts but implementation is the major problem because its institutions are contaminated with injustices. The decentralisation of conflict mechanisms might change the situation but more open questions remains.

6.16 Collective action in Mtanza/Msona and Mbunju/Mvuleni villages

In this chapter the factors contributing to collective action in two fishing lakes will be illustrated and the two case studies will be taken up separately for comparison reasons. It is interesting to see a village can manage to control its resource where the local residents are involved but fails to act collectively to maintain the other resource, which the local villagers identify as state property and have no direct incentives to protect it from misuse. In the cases to be presented in this chapter various factors have been taken into consideration and their influence to collective action for any resource where many people are involved.

The locality and the composition of ethnic groups on the resource site influence the Management of the CPR in the floodplain. As already mentioned the Ujamaa policies changed the internal structure of resource management and exposed them to all actors who are interested in the CPRs. The replacement of the customary land tenure and transferring the resource and land to the office of the president left the traditional institutions weaker than in the colonial times. The management of the CPRs today is quite different as compared to the past. In the pre-colonial time the traditional institutions managed the resources according to the interest of ethno professional groups, who designed how the CPR was to be used and managed and the users were to respect the customs and beliefs, which maintained the sustainability of the CPR.

The interest of the ethno professional groups was not overlapping like today and that is why resources were manageable, however, these groups shared the same ecosystem and the conflicts magnitude was very low. The homogeneity of the Ethno-professional group made the management and conflicts related to the use of the CPR under control and the CPR users respected the customs, norms and values, which were attached to the CPR contributing to its sustainability. The CPRs management in the two twin villages are not similar, however, the villages are found in the same floodplain. The influence of CPR management in

Mbunju/Mvuleni is quite different as compared to Mtanza/Msona, which is located in the western floodplain closer to Selous Game Reserve.

Mbunju/Mvuleni village

In this village the lake of Uba is the interesting case as people of different interests access this lake for a livelihood. It is said that the diversity of interests and lack of mutual interest are the basic barriers for collective action related to use and management of the lake.

Lake Uba is located in Mbunju/Mvuleni village, Mkongo division in Rufiji district. The village being closer to the Ikwiriri Township has attracted more external fishermen to Lake Uba. Therefore, many different people with different interests try to use the fisheries in the lake and this has made the management of the resource complicated. It is difficult for local people to exclude the outsiders, as they have the access rights through fishing licences issued by the fishery department.

The possession of the fishing licences gives the commercial fishermen the rights and power to access the fish sites without consulting the local village government officials. Nobody can stop them as long as the permission paper is in their hands. The continued increase of fishing boats and nets of various sizes in Lake Uba has contributed to competition between resident fishermen and seasonal commercial fishermen immigrating from Ikwiriri and the neighbouring villages. This is contributing to over-fishing in the lake as the actors enter into the waters as many times as they wish per day. In addition, the changing of fishing technology has led to depletion and degradation of fisheries in this lake as small-meshed nets are in use. Fishermen have reduced the mesh size of the fishing nets as big fish have become rare and difficult to find. The differences in interests between local villagers where one part of the group use fish for subsistence while other group aim for selling has complicated the task of managing the fisheries. The joining of local people in the commercial fish business has increased the demand for fish and conflicts in Lake Uba.

In the last years the lake has been frequented with too many commercial fishermen and the fish stocks gradually started declining. It is said that the residents of Mbunju/Mvuleni pursued to close the lake with the help of the district authority and one of the external NGOs but the initiative has been challenged locally. However, the intention of the IUCN (REMP) project was to assist the local villagers to manage the CPRs but the process created chaos and mistrust among the villagers because not all stakeholders were identified and consulted before the implementation process started. Those who were not included in the CPRs management seminars did not accept the presence of (REMP) people in the area. This caused disagreement

as one group was trying to close Lake Uba while the other sees it as open access. The failure of collective action made the closing of this Lake impossible. However, the residents were concerned that the fish stocks were getting smaller and smaller, that didn't mean much to them when conservation decisions were about to be taken. Despite the reports of REMP, that this lake is one of the conserved Lakes in the Rufiji floodplain but the REMP office failed to convince the local people for its closure for three months to enable the fish to regenerate.

Lake **Uba** is facing more challenges today, which are externally reinforced and the village administration have lost control over the management of the lake, however, the same Lake is supposed to be closed three months in a year the fishing activities takes place throughout the year said the interviewed residents. We have never seen the lake resting even a day there are a lot of boats that sail from one shore to the other without respecting the fishing time said the village council member. In the past the council of elders from the village of Mpima, which is sharing the physical boundary with Mbunju/Mvuleni had responsibility to manage the lake of Uba as the land of both villages is separated by the waters of Lake Uba. The locally elected council of elders from both villages before had a calendar of closing the lake and the same people controlled the access of this lake. The effective regulation of the lake permitted the local fishers to approach the lake with care and all the taboos attached to the fish use were observed to the letter. The opening of the lake through villagisation process complicated the regulation and monitoring of the lake. Gradually the external users were seen fishing without giving notice to the council of elders, who were the managers of the lake for many decades before the villagisation programme[25].

The traditional fishing rituals become impossible has the number of the villagers enlarged and it's heterogeneity in composition made it difficult for the ritual specialist to organise for the fishing rituals as the fishers rejected to pay their tributes. The new resource users lack local knowledge on appropriation rules and it is not easy for the ritual specialist to convince them to participant in the fishing ritual ceremony. The struggle between the Mpima and Mbunju people to close the lake for three months was solved but the people from Ikwiriri did not respect the decisions of the two villages and that made collective action impossible as one group agreed and the other refused to respect the rules. These non-resident fishers continued fishing claiming rights of access through the possession of fishing licences, which they

[25] Villagisation programme took place between 1969-1977 and was believed to be the best method of implementing the policy of Ujamaa (African socialism) and self relianceas contained in the Arusha Declaration of 1967.

obtained from the fishery department and the ideology of citizenship gave them extra powers to access the lake using their chest. However, the fishers from the two villages accepted the closing of the lake the presence of the Ikwiriri fishers in the lake angered the Mbunju and Mpima fishers who later changed their behaviour and started fishing like the Ikwiriri fishers did. Through such behaviour and attitudes the closing of Lake Uba in Mbunju/Mvuleni became difficult for the Mpima and the Mbunju people. The individual interest in the resource and the ideology of being a Tanzania rendered the village management institutions powerless and were not able to exclude the non-residents. The failure of the state to provide strong management institutions ruined the status of the resource and its social-economic functions has disappeared gradually. The current situation of the fisheries in Lake Uba is not encouraging because the open access constellation and high competition in resource extraction has reduced the fish stocks in the lake tremendously.

The Mpima people claim the lake was founded by their great grandfather the youngest brother of the Mbunju people but now the Mbunju have turned against them and want to take the whole management and ownership of the lake. The lake Uba is between the two villages of (Mpima and Mbunju) and that is why the management of this lake won't work without including the other actors like the Mpima and the Ikwiriri people. These people who are now considered as outsiders from Ikwiriri especially are those who were moved to other places during the villagisation programme but formerly were residing in Mbunju the sister village of Mvuleni before the villagisation process of 1974. These people are pushing back to use the resources, which they feel to have a right to own and manage as it was in the 1970s. The tracking back of the ancestral land rights have made the matters complicated for the Mbunju/Mvuleni administration today to exclude them from resource use because the same people have blood relatives in the village, which they are using as an venue to get access to the resources. The incoming people use the weakness of the institutions today in the region to force the residents of Mbunju to accept them back; however, their official registration is in different villages. These people are attracted back to the area because of the availability of natural resources in this village. However, the village government has power to lock these people out the traditional beliefs and social-networks ties their hands when it comes to resource use at the local level. More than 25% of the fishermen in Lake Uba come from Ikwiriri Township. The continued coming back of the Ikwiriri people threatens the sustainability of the natural resources in village of Mbunju/Mvuleni. The villagers argue the Ikwiriri people fish without respecting the local norms related to the harvesting of fish.

However, Lake Uba was declared as one of the conserved lakes in the Rufiji floodplain in 2002 by IUCN but still the process has not materialised because of disagreement between the main users and the implementing institution. It is said that not all actors were involved in the closing negotiation from the start and now it is difficult to close the lake while the other parties are against the process. The village government shift their arguments on boundaries problem but the villagers say corruption and ethnic differences has made the whole process costly and complicated. The external users of the resource feel threatened and as their livelihood are in jeopardy and have vowed to protect it by going against the proposals of the village government of Mbunju/Mvuleni and the district authority to close the Lake. Despite the declining of the size of fish in Lake Uba the Villagers internal differences and external pressure contributed to hearts change to jeopardise the conservation plan, which was intended to benefit the whole village.

The problems of lake Uba were discussed openly at the first attempt when, a group of residents discussed the closing issue with the village council and then called a meeting of all residents in order to present the case for closing and reach community consensus on the project. The village government attended this meeting and presented residents with the relevant information. At the meeting, the residents agreed with the suggestions of the initiative group and the village government but were afraid how the implementation process was to take place. The residents apart from the group, which stated the project opposed further the agenda of the group and threatened to use other means to bring down their efforts to close the lake. The villagers found it abnormal to close the lake without consulting widely. The leaders tried to explain them the positive impact of closing the lake for a period but the whole issue turned to be politics.

This explanation did not help to convince some residents that the decision against closing the lake was not particularly dangerous. The ideas of the leaders did not go down well as some individuals who accused them of corruption questioned the role in the project. It was openly questioned the interest of the external actors, which the locals claimed to have bought the lake from the village government and now were using tricks to convince the villagers that the closing of the lake was for the welfare of the local people.

According to one interviewee, the lake “was messed up years ago” and confusion emerged concerning multiple ownership of the Lake Resources and Lake Access. Initiative leaders ostensibly are working with the local government to resolve these issues, but uncooperative or unresponsive officials have slowed their efforts. Low community interest also has brought the

attempt to a near standstill. Though many residents say they want a higher production, attendance at organisational meetings has been poor and people have been unwilling commit themselves to the project. One interviewee repeatedly emphasised that the process has been a "struggle" and that community interest declined particularly near the end of 2002 as the locals realised that not all interested parties in the lake resource were included in the discussions and the implementation of the project.

The members from the large ethnic group were pushing for the project implementation and at this point the minorities groups felt threatened and excluded from the management initiative. However, the leaders wanted to set up an institution that would bring together the entire interested village residents to the project but the ethnic identity dominated the whole issue and the initiative faced stiff challenges and was watered down before the implementation process started.

Though the issue was referred to the village committee for further study, following the meeting, general consensus was against closing the lake. Residents were wary of the costs for closing the lake but the explanations given from the village leaders were brushed aside as the resident villagers especially the young people stood on their decision. As the lake is the source of food and cash for many of the residents in this village closing it without giving them livelihood alternatives was seen as the major reason why the initiative was opposed. The villagers accused the village government of selling the Village Lake to the outsiders (NGO) and the district authority officials. Many people were not interested in committing any resources to the project as they complained on lack of co-operation and communication among the villagers and the leaders. One interviewee attributed community disinterest to "old school of thinking" residents who resist any kind of change, even though in his opinion the community would be better off with a new process of managing the lake.

However, the external actors continued to push the village leaders to co-operate but the implementation process was difficult as the rest of the residents continued accessing the lake as before. Despite, the efforts of the external actors and huge sums of financial resources invested to protect the lake resource from over exploitation the initiators dreams died and buried after the external actor pulled out from the region before proper institutions were put in place to monitor and regulate entry of the fishers. It was revealed that collective action in this case was difficult as the local people failed to have mutual interest in the resource and that kept away the interested groups from uniting to tackle the problem collectively. Trying to communicate with other lake users for the purpose of co-ordinating collective action seemed

frustrating, even pointless, as the village residents were not sure with whom they should talk as the influx of resource users was uncontrollable. At this point the residents simply assumed that their individual contribution would not matter greatly to a management initiative. Per the expectations of van Dijk and colleagues (1998), social uncertainty inhibits collective action. While Allison and Kerr (1994) argue that community institutions can be strong mechanisms for promoting collective action, their efficacy depends in part on community perception that they are influential.

Generally Lake Uba is used by a greater number of people today local residents and non-residents than other surveyed lakes in the floodplain. The village residents sometime are unsure who actually comprises the village residents and thus who accounts for the management of the lake resource. As (Ostrom 1998, Bromley 1992, Simmons and Schwatrz-Shea 1993) argue that the social networks, norms of reciprocity, and community cohesion that support co-operation only evolve over time among people who jointly depend on a resource.

It was witnessed that the large size of the community reduce the importance of social factors such as reputation and credible commitment; backing out of verbal commitments to support community initiated project such as lake closing for better production on the benefit of the interested resource users. Once the social cohesion fails it contributes to social barriers because residents do not know one another well or interact with one another often or long enough to establish an Institution for the management of the resource.

On one hand, CPR literature certainly argues that institutions are important to effective resource management. However, CPR writers also suggest that the role of institutions in collective action cannot be simplified in the manner of a relatively uncomplicated variable such as group size. Institutions vary significantly in composition, behaviour, purpose, and social standing; as Dietz and colleagues (2002, 25) point out, “the best available knowledge strongly suggests that the search for a single best (institutional) strategy will be futile.”

Theoretically, institutions facilitate co-operative CPR management as they provide the community with institutional memory, preserving the lessons of past collective action attempts and can foster trust and reputation (Schlager 2002, Seabright 1993, Simmons and Schwartz-Shea 1993, Ostrom 1990, Ostrom and Crawford 1995). As institutions are the tangible focus of group identification, the symbolic representation of the community to which members commit, it is necessary to support their formation to provide rules, which will control the behaviour of the resource users in order to avoid the tragedy of the open access.

Yet institutional structures and even their apparent advantages can hinder co-operation in certain scenarios. If, in the past, a community failed at collective action, institutional memory that reminds residents of this failure may reduce their confidence in the group's future efficacy and make people unwilling to join a losing team like the case of Lake Uba.

To conclude the Mbunju/Mvuleni residents failed to come up with an institution accepted by all interested actors in the use and management of the resource. The heterogeneity of the resource users, community members, diversity of the interested groups, ethnic identity, political pluralism, made the whole system complicated. Also the continued out and influx of the resource users, and time of resident in the village have contributed to difficulties to organise and co-ordinate at the village level as information flow takes time due to poor means of communication structure.

The political boundaries need to be tackled in this coast region of Tanzania to enable the village governments to exercises their powers freely. This will bring together the local residents to defend CPRs within the village land as compared to the present situation where all resources can be accessed easily as proper institutions are lacking to govern their management. The changes of government officials at the district level have made things difficult and costly for the village government. Much of the resources have been wasted because corruption is the order of the day in the lands offices. The files disappear until the clients give bribes to the officers in order the files to be returned the game continued in the same way for years. The management of Lake Uba and other CPRs will be successful once the boundaries issue and the interests of all stakeholders have to be tackled collectively said a village council member.

Mtanza/Msona Village

As we have already seen in the first case on collective action in Mbunju/Mvuleni the case represented in this chapter on Mtanza/Msona gives a new scenario on collective action in this region. When analysing the reasons and the process, which the villagers of Mtanza/Msona underwent to achieve the collective action in the fisheries management, it gives them a point on their reaction compared to the case of Mbunju/Mvuleni. The Mbunju/Mvuleni people failed to own up their difference and push for collective action to revamp the old institutions to manage the resource compared what the Mtanza/Msona people did for the success.

Lake Mtanza is located in the Western floodplain in Mtanza/Msona village, Mloka division in Rufiji district. The lake is surrounded by natural forest and is considered as a community lake and the only source of vegetables (fish) for Mtanza/Msona village residents. The lake is one

kilometre from the village centre. The natural forest separates the village from the lake. To access the Lake the villagers have to walk through the sparsely distributed forest, which the villagers are allowed to harvest for firewood and building Materials but the village environmental committee must be informed before the harvesting take place but nobody from the committee is present to monitor the harvesting. The issue of collective action in the fisheries sector rise when the villagers realised that the fish stocks in the lake were declining at a rapid rate, as the villagers favourite commonly consumed fisheries were not coming from the waters any more. It is said that the village residents got worried and started consulting within the village members to find a way to solve the problem.

This village being in a semi-arid region the residents hardly grow green vegetables in the gardens but wild vegetables can be collected in the forest during the wet season between March and June. The only possibility for the residents to feed is through the lake resource. For the villagers this lake of Mtanza is their mother and father. The residents could not imagine to survival without fish. Every meal is accompanied with fish and their children have grown in the same way like their parents through the consumption of fish. All the households in this village are dependent on the fisheries from the lake either directly or indirectly, however, younger boys today are extending their fishing activities at night to the protected lakes of Selous Game Reserves but Lake Mtanza provides the villagers with protein security throughout the year.

As already mentioned early the climatic conditions and cultural believes will not allow the villagers of Mtanza/Msona to rear livestock as an alternative source for protein supply. The villagers fear for their security, as the livestock would attract wild animals such as leopards, lions to come closer to the village and that will endanger their lives but history of the residents disqualify them to own livestock, which the traditional culture is against.

Before the government transferred a large part of the village land to the Selous Game reserve the residents used to practise rotation of resource use and that enabled the resources to rejuvenate naturally. The declaring of the Game reserve illegal place for the residents from this village to access the resources forced the residents to concentrate on the limited resources, which were left open for them by the state. The residents managed to remain with Lake Mtanza as the rest of the lakes formerly recognised as community property were now under the management of the Selous Game authority. The nationalisation of these lakes caused great impacts on the fisheries in Lake Mtanza through over fishing.

Since the options of the villagers were now limited the dependence on this single lake for fisheries became high and competitive among the resource users. The villagers were sent into confusion and the locally established institutions were weakened by the state policies and everybody started fishing without following the traditional rules. These rules formerly promoted collective action in the region as the locals utilised the resource according to the demands of their super natural spirits, which had upper arm in the resource control and regulation. The respect of the spirits rewarded the locals and over fishing was not an issue before. Today the increasing of fish shortage has forced the local people in this village to come together to revamp the old traditional methods to curb the decline of the fisheries in the lake.

The pressing need of the vegetables (fish) and the IUCN initiative for natural resource conservation by the villagers themselves, part of the villagers of Mtanza/Msona re-grouped and started conserving part of the Lake (see index picture 4). The preparation began in December 2002 when the economic, technical and cultural aspects of the proposed trials were finalised through group discussions under the assistance of (REMP) stuff. The brushwood parks locally known, as "Misakasaka" is a fisheries management tool widely used in West Africa and the results are encouraging. According to the village elders the technique had existed locally for many years and gradually disappeared in the 1960s. This happened when all natural resources were transferred to state institutions for management and all Tanzanians were to access them as a sign of democracy, which later accelerated the overuse of the CPR (fish) as well as other natural resources in the country.

The revitalisation of the traditional system (Misakasaka) Brush Park started when a group of village residents discussed the problem facing the lake resource openly and thereafter invited the village government to share the ideas. The main goal was how the lake resource can be saved for the benefit of the locals and the future generation. The village council then called a meeting of all residents in this village to inform them the idea of conserving part of the lake for breeding reasons. This small group, which proposed the closer of the lake, did the analysis of the problem, which received less opposition, as the villagers appeared to share the same notion. In this case the size of the community favoured a collective action situation and that significantly lead to the success of the proposed initiative. This concurs with Olson's argument on utility incentives, which declines as group size increases because resource requirements for material incentives grow onerous and the power of peer approval diminishes with reduced member familiarity (Olson 1982, Gachter and Fehr 1999).

This traditional method Misakasaka was to protect the breeding areas and make the lake non-accessible by the fishers during the closing periods especially in the month of March until June. Mtanza/Msona residents remember how the method helped to protect some species, which were almost over fished in the Lake of Mtanza in the past. The method was integrated in the local norms and beliefs related to the conservation and use of the fisheries, which traditional institutions implemented through the application of local appropriations rules. The traditional ruler (lineage leaders) opposed the misuse of the resource and all the species considered as totem were handled with care and no lineage member was supposed to bring such fish out off the water. The change of political regime affected the management and use of the fisheries in the lake of Mtanza said a local resident. The ethno professional groups lost their traditional methods of resource conservation as the lake was opened to all and over-fishing took place because the rate of fishing was high than the replenishing leading to the depletion of fisheries in this floodplain lake. The spiritual rites, which protected the Misakasaka Method, were done away and the lake became open access. The old institutions rules, which protected Misakasaka method were crafted according to the demands of the local customs and in favour of the lineage members and were easily implemented at minimum cost.

The reintroduction of the Misakasaka system came in the wake of fisheries decline in the local markets and even for the urban demand. The system was started to give the threatened fish species in the lake to regenerate to meet the local markets demands. The pro-Misakasaka method were inspired by the positive impacts of the method and decided to form a group to reclaim part of the lake for protection purposes. The project propaganda was passed from house to house but many of the villagers reacted negatively and called the initiators as total failures lacking constructive agenda for the village. Those who accepted to start the project registered their names and appointed the group leaders and forwarded their names to the village council and the copy to the district fishery department.

The project-received good will from the village council as some of the village council officials participated actively in the preparation and the implementation of the project. This has been done to reinstate the glory of the resource and protect the abused spiritual rites, which the community applied in the pre-Ujamaa time for the conservation and protection of the resource from mismanagement. According to the oral information from the villagers the Misakasaka method gave the community guarantee in resource use and access in the past. The entire community used to get sufficient fish and less conflicts in the lake existed in comparison to colonial and postcolonial period. The fishing norms and taboos were respected and the offenders knew the consequences from the spirits. The Misakasaka method was

incorporated to fishing rituals, which were performed in respect of the spirits of reproduction and the controller of the lake.

However, some individuals tried to oppose the initiative the tensions caused were taken lightly by the Misakasaka group members as they said those behind the tensions were the enemies of the project, lazy and against development. The members argued, the project will bring more fish to the local market and the dangers facing the resource will be controlled through regular patrols by the group members and anybody caught violating the project activities will face the law. The conservation of the fisheries in this lake is a social-economic activity with personal interests in the resource. The reintroduction of the project has succeeded because the village council supported it and pushed its implementation through local resource beliefs, which was applied in the pre-colonial times.

The inclusion of women in the management of the project contributed to its success as the free discussion between women and men has changed the old ideologies, which gave men power in resource management. The active involvement of women in the CPR management has opened a new chapter in social organisation in the area as women are now allowed to participant in village management meetings, which were formerly considered as the work of men. Through cultural and religious believes the men used to control all the management of the CPRs but now both sexes are recognised in the management. The acceptance of women as equal participants in social-economic and political activities in this region has placed the gender division of labour above the traditional culture today. However, the women are considered to be the most users of the CPRs in the region the men have been dominating its management for decades.

The problems facing the fisheries affected all the resource users, despite the political or religious affiliation and have shared the common problem the villagers resulted to co-operate for a common goal. The local resident's behaviour made collective action to function as the villagers had mutual interest in the resource and that made it easier the closing of the lake. The villagers took the entire control of the lake and the non-resident fishers were terminated to access the lake. The villagers solved to watch closely the activities of the external users as the resource now is under the management of the villagers. The non-resident fishermen who are actually a minority in this village and irregularly accessed the lake are trying to use the local youths to oppose the system but their efforts bears no fruit because the new collective action binds all villagers to resist external influence collectively. It is claimed that money has been exchanged between the local youths and the non-residents fishermen but local

institutions have managed to keep them at bay. The local co-operation for the non-resident resource users is not received well because their livelihood is threatened as the new local management institution excludes them from the entire management.

The regularity of residence has enabled the residents of Mtanza/Msona to organise and co-ordinate and this has influenced Lake Management, because communication at the village is relatively easy, as the residents know each other personally. This has allowed the residents to anticipate the behaviours of others and co-ordinate their behaviours accordingly. The residents said the existing mutual relationship in the village is the best tool, which allows the residents to circulate information about the needs for the lake management and other issues related to natural resource management.

The resident's unity and willingness to take active participation in the conservation and management of this lake has promoted local co-operation as the initiative was locally established. Wade (1988), Ostrom (1990), Baland and Platteau (1996) and Agrawal (2002), say that the most successful institutions have locally-designed rules because these structures best-fit community needs.

Though the members of small groups often know one another well and social cohesion arguably enhances collective action capacity, this solidarity has a downside. The familiarity among group members may reduce the need for social acceptance and the pull of conformity, freeing members to voice their opinions about the nature, strategy, or advisability of collective action and perhaps stalling a co-operative effort.

Two interviewees familiar with the lake of Mtanza provided testimony that the size of the lake and local co-operation has discouraged non-resident users to access the lake. Through personal observation and oral information from the key informants the geographical position of the area automatically locks out potential non-resident resource users to access this lake, which is located hundreds of kilometres from the nearest markets. The accessibility of this village is quite difficult, as the earth roads are not passable in the wet season when the fish stocks are high due to increase of floods, which bring fish from the protected lakes in the Selous Game Reserve. The catches are low in the dry season and do not attract commercial traders to the area compared as in the rain season when the lake is replenished with fisheries out-migrating from the lakes in the Selous Game reserve.

As the fruits of collective action have been realised and widely distributed to all households in Mtanza/Msona the residents have vowed to control their rational behaviour and defend their resource from non-residents as well as resident defaulters at any cost. Now the local people

regulate the fishing and collective fishing is organised around rituals. The ritual specialist is seen to control crocodiles and commercial fishermen have to submit themselves to local rules. If they do not do so, it is still believed that the super natural spirit the controller of the lake sends crocodiles and hippos to chase the fishermen out of the lake and only after giving an offer can the fishermen conduct their activities without harassment. Interestingly, local people have the view that fishing too much is not a problem but fishing without respecting spirits leads to a decline in availability of fish. This reflects the traditional belief that it is the spirits and the major spirit Subian, that controls the fish and exposes people to wild animal attacks and keep the fish in the holes because respect is not shown. Therefore, the idea of overusing fish is not known to local Mtanza /Msona people.

However, collective action has enabled the villagers of Mtanza/Msona to control the out and influx of fisheries users in the lake but interesting the same people has failed to control the wildlife hunters in the village land. The existing black market for the wildlife products in the neighbouring Kisarawe district has contributed to illegal haunting in Rufiji floodplain. The area is now easily accessible for poachers from Kisarawe district, which is the outlet route for bush meat to Dar es Salaam. It was said a group of local people are actively involved in this lucrative business as it earns them a living. However, the minority of the villagers talk openly on the business a large number is involved in the activity.

Game has become more and more open access resource because the Selous Game Reserve is not well monitored anymore. Due to SAP there are financial cuts in wildlife management. Scouts are not or not well paid and therefore monitoring of the reserve and sanctioning of illegal hunting is getting difficult. On the other hand, wildlife sells well in Dar es Salaam and a lot of commercial poachers are civil servants who lost their jobs through the SAP and the following civil servants reforms. They are now engaging in hunting as an income alternative. New Infrastructure and new technology have also led to better access to wildlife resources by roads and using new automatic guns and electronic positioning systems instruments (GPS) to track down the animals and escape the game scouts easily or pay the game scouts off. In addition, animals seem to move out of the area for two reasons: One is connected to the increased poaching, the other to climatic change: Because of less rainfall, less pastures for wild animals are available. This leads again to problems with agriculturists because wild animals start feeding on the fields.

To conclude the results from the revitalisation of the old methods of resource conservation through collective action has pulled more local residents to support the management team and

now the villagers consider the resource as their own as rules of access are followed as traditional beliefs reinforces them again. Those who have joined the group make verbal promises to one another about future behaviour and, if these pledges will be kept, the trust-based social foundation for future co-operation is established promoting the sustainability of the resource. The Collective action has succeeded in this remote village of Mtanza /Msona as local residents feel included and recognised in the entire management and that has promoted its successes.

6.17 Role of NGO and government in CPR-management

The recent involvement of NGOs such as IUCN in tackling the problems facing the CPR management is important for it can help in the process of collective action. This was sought to be achieved by the Rufiji Environment Management Project (REMP) by forming Village Environment Management Committees (VEMP) in the two research settings that worked out Environment Management Plans. REMP was funded by the Dutch government and done in collaboration with the Rufiji district officials. The project has won an Environmental Award (United Nations Development Program Equity Award) in 2004 for its participative initiative in order to protect the Rufiji ecosystem. Working together with the state on the district level and decentralised on the local level and the aim to form committees on the local level is a very positive step in co-management. On the one hand it helped make the local people aware of environmental problems and the management and protection of the resources by giving back a certain amount of power for decision making to local people. But our research revealed that some of the results were mixed, which could only be seen by living among local people in Mbunju-Muvleni. The district officials did not always fully participate in the project and help implement the project ideas. The reason for this was that local party politics was involved because the local representatives from opposition parties felt excluded. In addition, the involvement of NGOs in negotiating the ways of using and protecting Lake Uba not only led to solutions (monitoring the lake, closing times) but to conflicts as well because not all communities claiming access rights was involved in the regulations. The external actors did not participate in the entire process and that made it difficult for REMP to meet the demands of all stakeholders using resources from the lake as well as from the village forest. The closing of the lake accelerated conflicts because outsiders claimed rights of use while the locals stressed ownership rights. The district officials on the other hand continued issuing fishing licences while the lake was still under the conservation agenda of REMP and therefore undermining the closure of the lake. As district officials still have more bargaining power in such issues than the locals, it was difficult for locals to act against this process.

The opposition felt their livelihood was being sold to this NGOs and that is why the good work the NGOs initiated was disrupted by those who were left out but were part of the targeted group, which use the resource. Closing Lake Uba in order to give fish stocks time to recover will never take place unless all stakeholders are consulted and alternatives are found to replace their current livelihood.

6.18 Conclusion

The fishing activities in the Rufiji floodplain have undergone various changes according to the change of political regimes in the last 50 years. In pre-colonial times collective fishing among the fishery groups was done in lakes only after the ritual offer (*tambiko*) was performed by a traditional specialist for the whole area of an ethnic fishing group under the traditional lineage leader. This specialist moved from one lake to another and only returned to the same once the council of elders was satisfied on the fisheries restock in the lake. The ritual was done for the security of the fishermen against the attacks of the crocodiles, hippos and snakes. In addition, it was believed that fish was getting less available not because of lesser stock, but because of disrespect to the spirits' demands, who then made fish to be held back in deep water. The ritual made the crocodiles, hippos and snakes harmless and *Subiani,* the controller of the lake, was then so kind as to set the fish free from the hiding holes in the deep water. This collective ritual offer was done twice a year and that gave the fisheries a chance to replenish naturally.

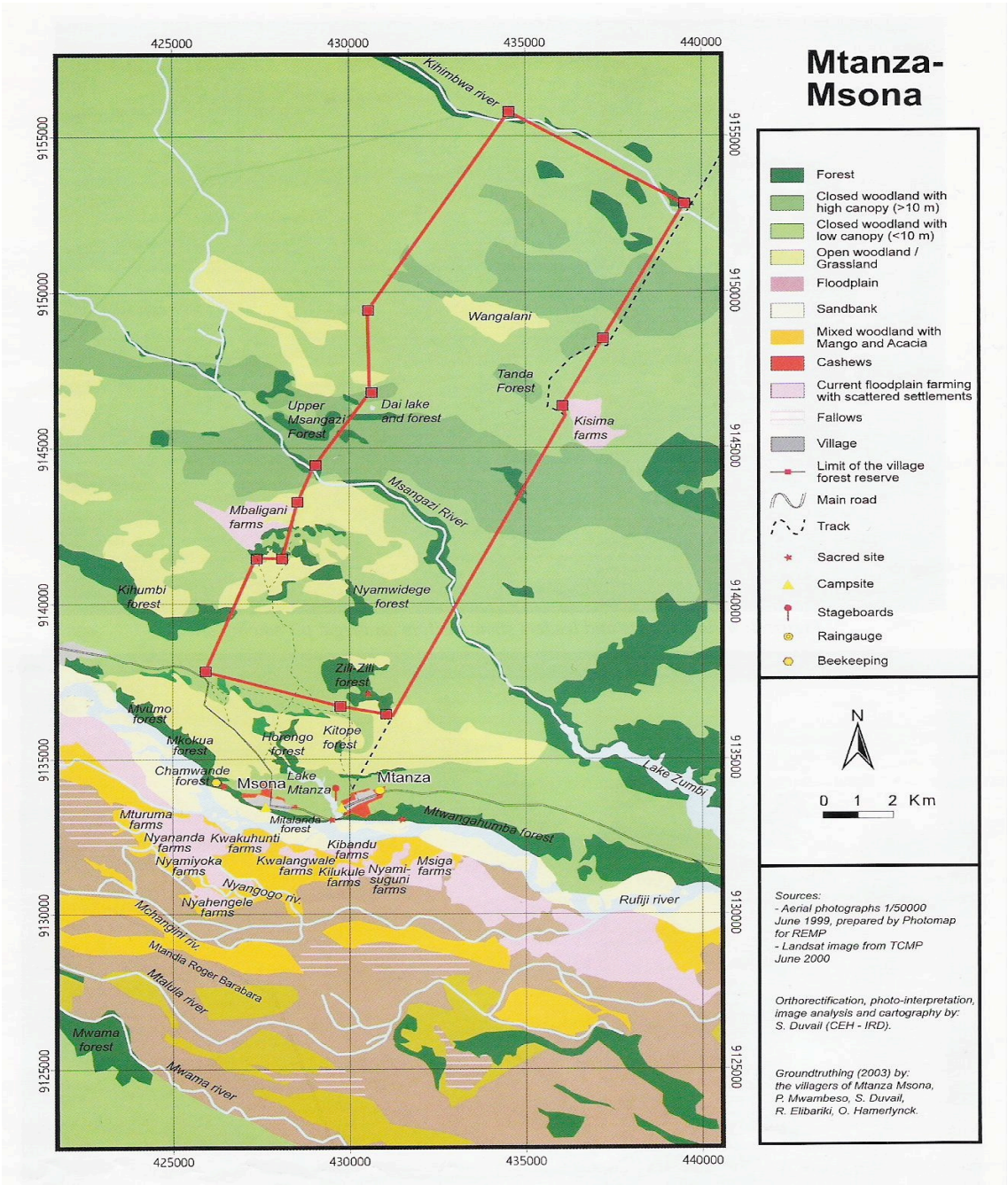
The replacement of the old institutions with the new state institutions has affected the sustainable use of the fisheries in the floodplain today. It is said that the external resource user brought bad omens to the lake and now the controller of the lakes has been annoyed with the behaviour of the fishermen and the resource has declined. This does not mean that the decline of the resource is caused by biological effects but is related to disrespect of the fishermen towards the controller and owner of the lake.

The dismantling of the old institutions paved way for misuse of the fisheries as the customary by-laws were replaced by state policies, which opened the lakes for the outsiders contributing to open access situation. The new state institutions lack local support to manage the resource, as was mostly the case with the traditional institutions. The locals see the issuing of the licences and the dismantling of lineage boundaries and replacement of the lineage elders by the village chairmen as the main problems, which led to the change in traditional use of the resource. The commercialisation of the fisheries attracted many people to join the business leading to depletion of the fish stocks in the floodplain lakes and other areas in Tanzania. We

can conclude that the problems facing the fisheries in the Rufiji floodplain are connected to poor management of the resource by the government institutions. The shortage of manpower and financial support as well as good infrastructure contributes to slow implementation of the government policies in the region today.

7 Hunting in the Rufiji Floodplain

Map 4: Mtanza/Msona Village



Source: REMP, 2002

7.1 Ecological basis of hunting

The basic ecological feature in regard to wildlife in the Rufiji area is its semi-arid climate and the fact that regular floods give access to pastures and water points at different time during the annual cycle. There are stationary animals staying at the permanent water places such as lakes. These include crocodiles, hippos, non-migrate antelopes (locally called *sitatunga*) while other animals are mostly migrating such as mainly elephants, antelopes, waterbuck, reedbuck, zebras, hartebeest, bush pigs lions, buffaloes, black rhinos and predators such as leopards, spotted hyena, and African wild dog. In addition, there are a large number of water birds (flamingos, ducks etc). For the migratory animals, the following pattern can be observed: In the dry season (July – November) the animals move from the higher lands covered with forests to the pastures in the lowlands which is covered with fresh grass after the floods. Important are small water ponds from which animals drink as well as the main river. During the wet season, the animals migrate to the higher grounds, where they can access the community forest. Hunting is mostly done during the dry season in the floodplain close to water points, which attract animals such as hippos, waterbucks, warthogs, elephants, crocodiles, sitatunga-antelopes, and water birds such as flamingos and ducks. Animals move to the village areas but also further in the thick higher forests they can be hunted though there it is much more difficult to track them.

These animals are part of a complex food chain, which is reflected in the high diversity of biota in the wetlands. The pastures around these lakes support the needs of these animals and their waste products, especially from hippopotamus drops, are vital for the growth of plankton, on which the fish feed.

This means that for a village such as Mtanza /Msona the forest vegetation around the village is regularly visited at least once a year by the migratory species. These animals keep migrating according to seasons in such of water, pasture or calving opportunities. The elephants, zebra, buffaloes and antelope move at least once years to a different grazing ground and return back when the season is over. The animals follow specific corridors, which are well known by the local hunters. Despite of the movements of the four species the rest of the animals are forced to dislocate from their permanent habitants either to search for water or pasture. These animals come out of the forest once their livelihoods declines or are in danger through the human activities like fire outbreaks. The rain season brings the animals closer to the homesteads and it is the most preferred hunting time because most of the animals are tired as they continue searching for dry areas for resting. The local hunters invest less time in the

wet season in search of the game as the availability of grass in the higher village attracts them for resting as the lowland is waterlogged. The resource is in plenty and hunters are blessed every day said the ritual master.

The availability of pasture in the village lands retains the animals, which return to the lowlands after the long rains are over. The changing of habitants between one ecological site, enabled grasses to rejuvenate again, which was used in the dry season. The mobility of the animals between the open grassland and the highlands leaves the major biomass to recover again every year. But this depends largely on the flooding pattern. The reduction of pasture and water in the last years due to prolonged drought has forced the animals to move to distance places in search of grazing grounds and watering points. The Rufiji people occupying the buffer zones are having problems with the wild animals, which continued attacking them as well as destroying their crops.

7.2 Pre-Ujamaa hunting techniques and institution

The situation of game stock and availability before colonial times is difficult to assess. The local people say the Game has disappeared because of over-hunting, which took place in the 1970s. As demand on ivory was high in pre-colonial times because of ivory trade, early European explorers such as Joseph Thomson for the Royal Geographical Society did not seem to have seen that many elephants close to what is today's Selous Game Reserve. This changed considerably because by the end of the 1970s, there were about 110,000 animals counted. This number has seriously declined since the 1980s and came down to 29,000 in the early 1990s due to poaching activities (Baldus 2000, Ashley, Mode and Reynolds 2002). For other animals, no figures are available for the area. It is clear that the European demand for ivory had a negative impact on the stock of elephants but this appropriation was mostly done by outsiders and not by local people or their hunting techniques and institutions. These are now being presented and analysed before discussing further changes regarding hunting in the area.

Furthermore, it is important to know that wild animals were not only seen as a resource but also as a threat to local people who wanted to protect themselves from them. In this context, as we have seen in chapter 6, wild animals also become resource monitoring agents such as for fish in the eyes of local people as their actions are interpreted as signs of the will of ancestral sprits.

This chapter will show how hunting was done and regulated during pre-independence times. The main importance for traditional hunting is how people view the behaviour of wild animals related to hunting success. In the worldview of local hunting, ethno-professional

groups such as the Matumbi and the Makonde hunting success depended on the good will of the Master of the forest (Mchela) also responsible for hunting in the plain. The forest and animal spirits controlled the use of wild animals while the traditional culture managed the behaviours of the local hunters towards the resource. The hunter's conducts were to fit into the framework of the spirits' wishes, otherwise the animals were to disappear. It appears that the animal spirits but not the hunter's action determines the hunters' success. Similarly, as what Berkes has written on worldview of the Cree in Canada (Berkes 1986b, 1999), the Matumbi and the Makonde believed that it is the hunter's obligation to show commitment and respect towards the spirits of the trapped animals ensured a continued productive hunt. In their view, the hunter's success increased as he continued to show respect towards the hunted animal and meat obtained was to be shared according to the requirements of the traditional customs. The Rufiji traditional hunters used to approach the game with humility towards the killed animal and were to show respect to the spirits, which rewarded his hunting objects. The Rufiji people believe that the degradation of the CPRs (fish, wildlife) is not that the resources have been overused but the spirits have retained the resource to punish the users because of their disrespect and bad behaviour towards the resource. The traditional hunter's skills were locally measured by his success in getting what he wanted on a daily basis. It was possible the hunter had to move the whole day without seeing an animal and a disrespectful person would kill nothing. He might also see the animal in the bush but something would prevent him from killing it. The Rufiji traditional hunters commented that the disappearance of the animals could be related to the disrespectful, dishonest and egocentric attitude of the non-resident commercial hunters who have abused the norms of hunting. The elderly people blessed the hunter once the meat was shared among the unlucky hunters as well as the rest of the lineage members. The traditional hunters were warned not to boast (not to show off or be proud) after killing a big animal like the buffalo. The boasting of the hunter having killed the big game was against the traditional taboos on hunting. The hunter risked missing targets in the future as the animal spirits would keep the game out of his way.

Generally, the traditional hunters had to give offerings before setting off to hunt. By giving offering, the hunter was entering into a reciprocal relationship with the animal spirits, asking them to give him game. The hunters had to carry some flour, beans and maize which were placed under a special tree Mhoro and asked their grandfathers and mothers to keep dangerous animals from harming them and promised that anything they hunted would be used with respect and as food for their grandchildren. They would let the small animals pass by and were interested in the big animals only. Prayers were ensured success in hunting selected

animals and fat ones or big males. The hunters were protected by local tobacco from all animals, even though they slept under a tree.

Hunting techniques were not sophisticated and involved either individual or, more often, collective hunting. A brief description of traditional hunting techniques and the animals hunted will give an overview:

Snares: Often made of rope. These ropes were set around farming gardens or along the routes leading to the gardens, mainly to trap the small animals such as antelopes and wild pigs.

Pits: The hunters had to dig pits measuring 1.5m to 2m long and 1.5 m wide. These were dug on open space within a garden and covered with delicate sticks and grass. The trapped animals (antelopes) were confined by the pit walls, which sloped inwards and then killed immediately by falling on the sharp Machinga spears sticking up from the floor.

Simple weapons such as **clubs**, machetes and spears were common and required no skill.

Nets: The hunters plaited nets using ropes from special tree barks called Mtunguku or Mchopo and needed a special skill to make them. The experts had to ambush the animals, which run towards the set nets and consequently trapped. The nets were used to trap destructive animals such as monkeys and baboons but as well wild pigs.

Fire: It was used by youngsters between the months of August –October to push the animals from the dry grasslands into the river ravines bearing the green grass where they were easier to hunt.

Bow and poisoned arrows: Experts who had knowledge of trees with poisons used poisoned arrows. The arrows were made the animals ooze blood. The hunter had to follow the trail until he found the dead animal.

In colonial times, muzzle-loading guns (Gobole) became available as the local technology advanced in the hunting activity. The local blacksmiths started making local guns to compete with the colonial hunters. The guns were powerful as the foreigners and the local hunters started using them in hunting. The contacts of the colonial hunters with the local residents changed their behaviours and attitudes towards the wildlife. The interviewed hunters said the use of the gun was to meet the market demands of the wildlife products, which the colonial hunters introduced the local hunters to. Before the arrival of these people, our hunting activities were limited and the resident hunters used to co-operate to avoid risks while in the forest. It can be stated that the guns interfered with the traditional hunting institutions as the local residents turned against the hunting ritual master and the hunting become easy but

dangerous as most of the local hunters were attacked by the wild animals. The guns were not available to all hunters but to a single expert (fundi) who was locally respected through the handling of the gun. It was said that some of these experts had contacts with the colonial hunters before. However, the resident hunters started using the locally manufactured guns and the muzzleloader set up several taboos to be respected, which were associated with customary and witchcraft beliefs. The gunpowder known as Mangwala was locally prepared and obtained from local hills and mixed with roots of special trees to form bullets. The traditional hunters refused to reveal the names of the trees and hills where the powder was collected for security reasons and fear of punishment by ancestral spirits.

These traditional techniques were either applied collectively or individually. The pits technique involved youths and women when there was urgent need of meat in the household. The youths and women had to stand closer to the pits and shout loud and the targeted animals would get confused and follow the wrong route to escape. In the process it would fall into the pit and the elderly hunters had to kill it with respect. This method was simple and less destructive and reinforced the social cohesion in the lineage and gave women a chance to participate in hunting but strictly allowed to corner the pest without using sharp objects like spears. The same principles were applied to the youths, who had not undergone a hunting training.

The traditional techniques were embedded in the local culture and the elderly people used to assemble and pray for their youths by asking their ancestral spirits to protect them from fierce animals and reptiles. The blessings were always answered through the killing of an animal and the community had to treat the meat of the wild animals with care and respect to avoid annoying the animal spirit, which brought the pest closer to the hunters. The ritual of thanks giving was done at the beginning of the hunting season. The hunting weapons had to be isolated from other objects and women were not allowed to touch them as it would bring a bad omen to the hunter. The animal spirit was honoured and the ritual specialist requested the animal spirit to provide enough animals from the thick forest and bring them closer to the village. The techniques selected were known locally, which type of animal was to target and cheating was not possible. It was believed that the wrong selection of spears for instance would anger the animal if the hunter failed to kill it at once and turned against him at the end. This is the case where the hunters were being killed while hunting (the hunted become a hunter).

The traditional hunters made sure that the animals killed were those allowed by the lineage customs and that the habitats of the wildlife were taken care of. Destructive methods like setting fire was not allowed and applying of wrong techniques were condemned.

During hunting times issued by the Mpindo the council of elder's hunters were asked to respect the hunting rules and to harvest only for subsistence, rather than for commercial gain. At the same time, it was determined by the council which methods should be used in order to minimise disturbance to wildlife populations. The young men were instructed before joining hunting explorations and they had to undergo training on how to use traditional weapons to defend their lives and to bring meat to the group in order to be distributed. Respecting taboos (*mira*) such as not hunting before making sacrifices, cleansing of hunting objects and the animal as well as treating the meat with respect (for example, putting a branch into the mouth of the killed animal) were important ways of showing respect to the spirit of the animals. This norm was observed in order not to disturb the hunting success of the whole group. Meat had to be distributed giving access to especially old and disabled members of the community. The hunters had an obligation to provide meat to the weak and the disabled villagers, otherwise the ancestral spirits would to take away their luck and they would most likely be killed by wild animals or snakes in the forest. The hunter had to uphold the lineage responsibility and fulfil the traditional obligations.

The hunting used to be done in a collective way but the weapons were owned privately. Sometimes individuals were also allowed to access the forest under the same conditions like in groups. The collective hunting was preferred because of the hard conditions the hunters faced in the forest. The lineage leader organised the hunter's in-groups for monitoring reasons. The collective hunting forced the participants to obey the laid regulation and hunt for the requested animal only. There was no way one hunter could the group and engage in private hunting. According to the traditional customs, the hunters had to visit the traditional ritual specialist for blessings and their weapons were also blessed by sprinkling traditional herbs mixed with water on the objects before setting off to the forest to hunt.

The animal's name and the place of hunting had to be mentioned. The ritual specialist would ask the animal spirit in his prayer to avail and bring closer the requested animal for the hunters. After hunting, the hunters were obliged to take the animal meat to the ritual specialist to check whether the animal hunted was the requested one. The ritual specialist would get his share and the rest of the meat would be shared among the hunters and also given to the lineage members. The sharing of the wild meat reduced the demand and the number of entry

into the lineage forest. The best preferred hunting season was in the rainy season when the animals moved closer to the homesteads and in most cases slept under trees in the afternoon or early in the morning.

The council of elders would monitor the conduct of youths before accepting them as part of the active lineage-hunting group. The hunting community in the Rufiji floodplain, the Makonde, applied traditional techniques in hunting and named its children after animals as a sign of bravery and means of conservation. The hunters from this ethno-professional group used to work together while hunting throughout the year. The hunting activities continued throughout the year but the selection of hunting places changed regularly to balance the specie targeted in a particular region. The elders, through their traditional knowledge, knew exactly where and when the hunting had to take place. The respondents indicated that some meat was exchanged for rice or maize with those groups which were not hunters but sharing the same ecosystem in the pre-Ujamaa time. This ethno-professional group was well informed of the animal ecology and the entire ecosystem in the floodplain. The migratory pattern of the animals according to seasons was followed in order to avoid unnecessary accidents in the forest. The wet season hunting was preferred locally because the hunters struggled less to get meat for the pot.

Before villagisation, the village leaders had to declare specific areas for separate use. Some areas would be declared as housing, others as hunting areas. Importantly, sacred places where not to be hunted. In some communities, it was the lineage elders who managed and controlled the number of hunts in each season.

The rules were aimed at regulating and governing social behaviour in hunting and were enforced by traditional institutions through the application of customary laws. These structures formed the foundation upon which the lineage-hunting sector was based and governed. However, the lineage hunters were allowed to hunt freely within the territory boundaries, which were marked through the natural features such as mountains, particular trees, stones, river banks as well as lakes. The exploitation of the resources was done according to the specification of the lineage needs and observation. The hunters were restrained from hunting female animals, mainly the pregnant ones, which were taboo and young animals were also spared. In case the hunter killed a pregnant animal by accident, the lineage specialist had to conduct a special ritual to calm the animal spirits and the hunting objects had to be cleansed too. The pregnant animals were to be protected for the continuity of the specie and the supply of the meat pot to the lineage members for generations. The

conservation was based on longer term considerations and that is why collective action was applied to safeguard the interest of the lineage and individual selfish behaviour was discouraged through public shaming and curses. The hunters were obliged to follow the interests of the lineage for the benefit of the community members as well as their families.

The genesis of the hunting sector in Tanzania has also usually been traced to the early hunting initiatives commenced as a result of expeditions by the Arabs from Zanzibar into the interior of East Africa in search of slaves and ivory. The early part of the second half of the 19th century witnessed the emergence of British safari expeditions of which and hunting was a part. These are also often made reference to while locating the history of the country's hunting sector.

The foundation of traditional institutions, however, crumbled with the arrival of foreign influence and culture in the Rufiji floodplain. The rules and approaches to the game changed gradually as the traditional hunting institutions faced strong opposition from the newly crafted policies, which were implemented by the state institutions in the 1950s. The traditional hunter was considered an enemy of the game in the new institution policies and was excluded from the entire management of the wildlife.

The problems facing the wildlife sector started in the colonial era and extended to the postcolonial era. The colonisers protected the best for themselves under the cover of conservation. It is the colonisers who trained the Africans on the use of guns to kill the wild animals. Before the colonisers came to Tanzania, the local people used to apply their traditional techniques, as we have seen, which were not destructive and the game were in plenty.

Prior to the arrival of the German and British colonial regimes, Arab traders had ventured into the interior of Tanzania and exercised direct and indirect authority over some local hunting ethnic groups. These traders sized large amounts of ivory and other wild animal products and transported them to the coast. The expansion of this trade fundamentally altered the main tenets of the pre-Ujamaa "hunting sector" as some local hunting community members, who had hitherto abided by traditional rituals that prohibited killing game, started hunting wild animals with the specific objective of supplying the market. The hunting was slowly transformed from one that sustained the cultural and social fabric of local hunting community members to one that obeyed a capitalist market economy especially for ivory which made numbers of elephants, for example, decline massively. These features became more and more pronounced during colonial rule. The Germans as the first colonisers introduced a formal

wildlife legislation in 1896 and at the same time installed the first and biggest protected area, the Selous Game Reserve (see also chapter 5) and even added 14 more reserves covering 5% of the territory of their colony Tanganyika. They also stopped commercial elephant hunting in 1911 before World War II (Baldus 2000:1). After World War II, the British took over most of the formal wildlife institutions. During the colonial era, in most cases, national parks and game reserves were declared, local community members were forced to re-locate, sometimes by compulsion, leaving their ancestral lands and abandoning their age-old hunting practices. During German and British colonial times, the administration of the hunting sector was centralised. The views, interests and wishes of the central government on matters relating to the control of the hunting sector were transmitted directly to the lower levels of personnel who were appointees of the central government itself in a top-down management. This management included the issuing of licences and permits, monitoring and offence of rules. One of the major changes was the Fauna Conservation Ordinance from 1959 under which specific hunting licences were defined.

Table 17: List of hunting permits under Fauna conservation ordinance of 1959

General game licence
Minor game licence
Bird licence
Crocodile hunting permit
Local game licence (issued by district councils to holders of muzzle loaders)
Elephant hunting permit
NB: A hunter can obtain a certificate of ownership for durable parts of the animal if she/he wished to retain them for longer periods.

Source: Wildlife act 1972

The formal rules forbid the locals from engaging in hunting without a permit, which was issued by the Ministry of Wildlife and Natural Resources. This means that the colonial masters literally restricted the local population from using the resources because costs were high in order to receive such permit for it not only involved buying the permit itself but also travelling to the places where permits could be bought. The hunter groups were therefore formally cut off from their major livelihood strategy.

Today for local people to get access, the hunting licence must be purchased at the district headquarter Utete for the case of the Rufiji people. The residents must have the licence before the hunting period starts in July and continues up to November. The villagers have to move

between Mtanza and Utete for a couple of weeks in order to obtain a licence and sometimes there is a possibility of missing it, if the application forms are not well filled or the bribes are not given. The licence cost is lower for the local people than for foreigners. Although the fee is low, not all villagers can afford to get a licence.

Table 18: The licence cost per animal hunted*

Animals	Local citizens	Resident non-citizen	Tourist
Buffalo	6'000	27'000	480'000
Elephant	80'000	120'000	320'000
Lion	70'000	100'000	160'000
Greater Kudu	45'000	65'000	936'000
Grant gazelle	3'000	15'000	176'000

Source: Wildlife act 1972

* In Tanzanian Shilling

Although the figure for the local citizen's licences appears to be too little as compared to other stakeholders in the hunting activity, the processing of the licence takes more than the official price, if one is lucky to get it. The transport cost from Mtanza/Msona to Utete, the district headquarter, two ways is TSH. 3000, adding the lunch and the bribes, it can be between TSH. 10,000 to 15,000 for quick processing, that means, jumping the official red tape. It was said that the applicants of the hunting licence spent a lot of their savings in order to get a licence. There is a possibility that the licence is not issued the same day and the applicants are forced to spend a night or two in Utete. An overnight stay in a guesthouse in Utete plus meals costs TSH 3500. All these are transaction costs and now the question is how much a hunter gains after shooting a buffalo, for example. A kilo of wild meat at the local market costs between TSH 300-400 per kilo. It is not surprising that many people in the village are not able to eat meat because the TSH 300 is not available. Adding all the transaction costs, the local hunters find it difficult to follow the legal channels to get a licence and alternatively, illegal poaching is the solution. Despite that, the law states that 25% of the money accrued from the sale of hunting licences should flow back to the regions where the hunting took place, but much of this money remains in the district council account.

7.3 Hunting in Ujamaa time (independence)

The independent government generally retained most colonial wildlife laws and the formal institutional set-ups. The bulk of these laws included those relating to hunting. The adoption of the laws and institutions regulating the hunting sector had two main implications for the independent government. On one part, this involved the adoption of a mechanism that had been put in place to ensure the continued exploitation of the hunting sector for the benefit and interests of the international trophy market, with the government being the conduit pipe.

Secondly, inheriting the colonial laws and policies meant the inheritance of the hostility between the government and local community members. The latter were often denied access to resources in areas designated as National parks or Game reserves such as Selous Game Reserve in Rufiji district.

In adopting the colonial hunting laws and policies under which the wildlife is mainly state owned, accessible only via licence and protected in special areas, the independent government retained a policy that is primarily based on a top-down approach excluding the local community members from the hunting sector. The government controlled the locals' hunting behaviour and strictly issued licences and permits to people to hunt or capture wildlife. The informal institutions were renamed and restructured to allow the state to collect revenue from the resource users. The government policies protected the hunting sector under the Wildlife Conservation Act of 1972. Here is the summary of the permits, which were introduced after the restructuring of wildlife sector in the 1970s by the independent government of Tanzania.

Table 19: List of permits for hunting and capture of wildlife

Local hunting permits (citizen resident)
Local hunting permit (non-citizen resident)
Capture permits for live birds/animals
General hunting permits (tourist)
Trophy export permit
Special hunting permit
Presidential licence

Source: Wildlife act 1972

Note: issued under the Wildlife Conservation Act of 1972

The important aspect is that the local permits for local citizen residents is allowed by the wildlife department but it is very expensive for the local people to get them as the processing consumes time and money. At the same time, other people from all over Tanzania under the ideology of citizenship can obtain a licence easily for hunting without involving local communities at all. This has set a base for the continued resentment of efforts to develop the hunting sector by community members living in areas where hunting activities are conducted and regulated by government officers. After independence, most local people felt that their interests were still not considered by the government agencies charged with the implementation of hunting laws and policies. They did not see any benefits either in terms of the objectives of the sector or its relevance as a source for generating revenue in order to improve their standards of living.

As also stated in other chapters, the other main aspect was that through Ujamaa the ethno-professional groups stopped existing in their former setting because people were relocated into villages in which ethnic identities were to be stopped. This however did reshuffle the resource boundaries also for wildlife which were controlled under the customary law and opened up the CPR wildlife for outsiders, while at the same time the very basic structure of local regulations was undermined and its formal legitimacy lost.

During Ujamaa times, the Fauna Conservation Ordinance was repealed and replaced by the Wildlife Conservation Act (1974) but this institutional set up was retained with slight modifications. The Director of Wildlife's overall power in the issuing of hunting licences and permits, for example, was reinstated.

The economic change in the early 70's and late 80's had major implications on the tourism industry which could not be kept running well, while at the same time, toward the end of the 80s, hunting elephants and selling ivory became more and more important. While the tourism industry went mostly to Kenya, poaching along the Kenyan-Tanzanian borders increased tremendously leading to a drastic decline in wild animal species. The elephant population was the most affected of them all. Realising the impeding danger, the Tanzania government imposed a ban on hunting for the period between 1973 and 1978.

Formally, the principal legislation governing wildlife utilisation in Tanzania was (and still is) the Wildlife Conservation Act of 1974. The act places the control and regulation of the hunting sector to three main authorities. These are the director of wildlife, the minister responsible for wildlife and the president of the United Republic. This Act vests the Director of Wildlife with powers to oversee the overall management of wildlife in the country. The

provisions of the law define “hunting” to mean an act directed or incidental to the killing of any (wild animal). Hunting of any wild animal is therefore generally prohibited unless authorised by the law. In order to hunt, one has to order for the hunting licence under section 25 of the Act. The relevant authorities issue licences to be people who meet the criterion provided by section 25. According to the act, a game licence can be given to a person who is above age fourteen and in possession of a valid firearm licence in respect of the firearm she or he is intending to use in hunting. The hunting licences can be given to specified animals to the citizens of the republic of Tanzania or persons who have been ordinarily citizens for a period of one year. The Director is in charge of game reserves, game conservation areas, and open lands, while the Tanzania National Parks Authority (TANAPA) is in charge of the national parks. (This last provision is made under the National Parks Ordinance, Cap. 389.)

The key points of the Act regarding the powers and responsibilities of the Director of Wildlife are:

- Section 3, which establish the office of the Director of Wildlife who is appointed by the President. (The law does not state the qualifications necessary for appointment to this post.)
- Section 9, which provide that no person may carry out hunting activities in the game reserve and game-controlled areas without permission from the Director of Wildlife.
- Section 12, which states that no Person may graze animals in the said areas without having applied for and received permission from the Director.
- Section 32, which gives the Director the power to grant licences for the capture of animals for zoological, educational, or scientific purposes or for any purpose he deems in the public interest.
- Section 41, which gives the Director Powers to issue Presidential Licences to hunt, capture, and photograph animals on conditions lay down by the Director, whether or not such animals are protected by any other provision of this Act or any other written law.

Exercise of this power, which if broadly interpreted, could allow the capture or killing of endangered species like elephants and black rhinos. This will be in complete violation of international agreements like the Convention on the International Trade of Endangered Species (CITES) as well as national ethics is subject only to the Minister's approval.

The Director is empowered to refuse, in the public interest, to issue licences and certificates, or to grant permission to any person. The Director also has the power to cancel any licence,

permission, or permit. Any person dissatisfied with the decision of the Director may appeal to the Minister, whose decision on such an appeal is final and conclusive (Section 55(2)).

Finally, the Director is given pro-secutorial powers to try offences under the Act (Section 81).

The Minister is the second layer of authority established by the Wildlife Conservation Act, 1974. The minister is empowered to declare an area to be a game-controlled area (Section 6); prohibit capture and hunting in a closed season (Section 17); amend the Second and Third Schedule of the Act by an order published in a Government Gazette (Section 24); allow the hunting of scheduled and specified animals without a licence (Section 23); designate a body corporate or incorporate to be an authorised association, which in turn, entitles it to be allocated a hunting licence (Sections 26 and 28); make regulations concerning the issuance of hunting licences of scheduled and specified animals, the mode of hunting of scheduled animals, prescribe the functions of the designated organisation, and prescribe the maximum number that any grantee of a licence may hunt (Section 29); make regulations for better application of the Act to improve wildlife conservation (Section 84); act as the appellate authority in cases of refusal or cancellation of hunting licences (Section 55 (2)).

The President is the third layer of authority under the Act. He has the power to establish game reserves (Section 5); modify restrictions imposed on hunting of animals in game reserves, game-controlled areas, and partial game reserves (Section 19); impose a ban on any category of persons from being given a game licence (Section 22).

Despite the hunting ban in Tanzania, trade in wild animal species and products at the international market was still a lucrative business. Illicit hunting to supply the international market continued through dubious channels. Corruption became the order of the day in almost all sectors of the industry. The government decided to lift the ban with the hope that this action would salvage the crisis-ridden industry.

When the hunting ban was lifted, the Tanzania Wildlife Corporation (TAWICO) was charged with the overall management of the hunting sector. The management of TAWICO is vested in a Board of Directors which is composed of a Chairperson appointed by the President, and other members appointed by the Minister responsible for wildlife. The qualifications or criteria for appointment to membership to the board are, however, not stipulated but one has to be in the ruling political party. With the lifting of the hunting ban, the power of the Director of Wildlife to allocate hunting blocks was suspended and the power to allocate these and determine hunting quotas was vested onto the Game Division but supervised by TAWICO. TAWICO also became the designated organisation for purposes of controlling hunting

licenses, monitoring issuance of, among other licenses, those dealing with hunting, live capture of animals and hunting expeditions. The corporation was also vested with the power to hire firearms and ammunition and set requirements to govern the type of weapons to be used in hunts.

In further efforts to curb poaching activities, the government also amended the Wildlife Conservation Act, introducing two new structures. First, the Wildlife Protection Unit (WPU) (referred as the Anti-Poaching Unit) was established. The WPU is placed under the administration of the Director of wildlife. It is charged with the task of protecting wildlife against unlawful hunters and to enforce the provisions of the Act relating to hunting, capturing and securing of game trophies. The amendment also creates the Tanzania Wildlife Protection Fund (TWPF). The TWPF is essentially a retention fund and its revenue comes from among others sources, fees derived from hunting and handling of trophies.

7.4 Hunting under Post-Ujamaa Period: Liberalisation and decentralisation

The beginning of the 1980s witnessed a shift in the government's approach to economic reform. Although in principle Ujamaa policy still prevailed, the government started to encourage businesspersons to invest in various spheres of the economy including those that were nationalised. By 1985 the government had devised policies and charted out economic development plans and strategies designed to encourage greater private participation. Trade was liberalised in a move to enable the government collect more revenue from sales tax and customs duty. In an effort to revamp the tourism sector and enable it inject more capital into the government coffers; the government streamlined the state-owned Tanzania Tourist Corporation with a view to increasing its efficiency.

Together with these reform strategies, the government also set up an infrastructure that would foster improved relations with the private sector in order to boost its revenue collection derived from the hunting sector. The private sector responded positively to the government's initiative by forming and registering a hunter's body - the Tanzania Hunters Association (TAHOA).

With the change in the government's approach to opening up to the private sector in the hunting sector, TAWICO's role in regulating hunting increasingly became insignificant. It was therefore not a surprise when the government stripped off TAWICO's representative role in matters related to wildlife in 1988. Today, TAWICO remains an ordinary private company seriously riled with financial problems. With the demise of TAWICO, the Director of

Wildlife's power to regulate the hunting sector and specifically to control the allocation of hunting blocks, permits and licences was restored.

The government's efforts to reform the hunting sector with a view to bolstering the industry have been made at both the local and international levels. One of the strategies that the government has made at the international level has been to make every effort to conform to hunting standards, norms and practices that are recognised by international legal instruments that it has either ratified or acceded.

The regulation of the hunting industry is governed by the principle of professionalism. That is to say, hunters, just like the authorities vested with the power to regulate the industry, are required to conduct their hunting business in accordance with some professional code of ethics. In fact, persons issued with hunting permits or licences in Tanzania are usually accompanied by a government game scout whose duty is, among others, to ensure that the rules and professional ethics are abided by.

Most of the rules governing the commercial hunting industry are clear. They provide, among other things, that the hunting period is to run for about 6 months, starting from July to December of every year. They also provide that the Wildlife Division determines the costs of hunting of animals but on average, it varies from 2,000 to 4500 US$ depending on the age and species of a wild animal targeted. It is also a general rule that a hunter is required to pay double the amount if she/he wants to hunt a young animal. The rules also generally prohibit hunting of specified species of wild game due to their endangered species status. Of course, the authorities are vested with powers to exempt the application of some of the restrictions. It is, however, not expected that hunters devise ways to influence the exemption process to the detriment of the hunting industry and risk the continued survival of wild animal species. For example, it would be going against professional norms for a hunter to solicit for exemption to hunt endangered species of wild animals, merely for personal gain, without taking into account that such animal species that may become extinct if all hunters acted like she/ he did.

There are, however, cases where professional norms have been violated with the steady increase in the number of hunting companies that have joined the industry and less financial means of the government to provide monitoring and sanctioning in the recent years. There were initially only nine hunting companies when the government allowed them to commence business in 1984. The number had increased to 33, twelve years later. Tanzania’s professional hunters welcomed this trend as indicating a growth in the economy.

As the number of hunting companies increased, the hunting business has continued to thrive and more hunting blocks have been allocated. This implies that the allocation process of hunting blocks has to continually be revised in order to meet the increasing demand of the market. At the same time, the hunting quota allocated to each company per block remains the same. This scenario has led to a number of traitorous practices in the hunting industry leading to wild animal populations being depleted at alarming rates. This is a fact that is well known to officials of the government charged with regulating the industry, local community members and the hunters.

However, the country's professional hunters have done little to alleviate the situation. On the contrary, the professional body, Tanzania Hunters Operators Association (TAHOA), is noted to have encouraged the government to increase the number of hunting companies. In other instances, professional hunters have used dubious ways, the loopholes in the legislation and the arbitrary clauses in the law to exceed their hunting quotas and shoot more animals than the licences permit. Other hunting companies have opted for playing along with the existing bureaucracy, with its persistent problems that operate to their advantage, but to the disadvantage of wild animal populations and the industry as a whole.

It is also on record that during the five-year tax-free holiday system that gave a grace period to new investors, some hunting companies, again employing dubious means, changed registrations and ownership in order to qualify for the tax break. These companies were all out to maximise profits at whatever costs, irrespective of professionalism. Others secretly approached wildlife authorities and solicited, through bribery, for the de registration of their competitors or cancellation of their hunting permits and licences for no reasonable cause. This practice still exists and has led to sharp rivalry and mistrust amongst some of the private hunting companies in the northern circuit. This is a violation of the ethical standards for hunting specified in the rules and regulations.

Evasion of tax by some professional hunting companies is also done by way of the professional hunters who have been allocated a hunting bloc, acting as middlemen and sub-leasing the bloc to another hunting company. The parties then enter into a contract whereby the company that leases pays the professional hunting company reaping non-taxable profits of over US$1,500 per day.

Another show of lack of adherence to professionalism by the hunters was witnessed when the government invited the TAHOA to a round-table discussion to deliberate modalities of reforming the industry by removing unacceptable rules or conditions. The Association

surprised the government as it openly sought to maintain the existing framework, which is ruled by corruption, arbitrary issuance of licences and obscurity in general.

The wildlife division is now working towards reviewing the wildlife law with a view to taking on board the developments brought into the wildlife conservation and management arena by the promulgation of the Wildlife Policy in 1998. A general new trend is that management of parks cannot be done without the involvement of local communities and this means devolution of power under a kind of co-management or Community Based Natural Resource Management approach (CBNRM). The government has realised that without involving local communities, the management of such areas is too costly. However, the major issue is how to involve local people and how to structure invectives. This can be illustrated by the attempt to introduce Wildlife Management Areas to South, which have been done in the Northern Part of the Selous Game Reserve but which did not included our study area (see Asheley, Mdoe and Reynolds 2002). With these approaches, villagers can be encouraged to participate in the management by getting substantial gains from different activities such as income from tourists and getting income from meat quotas, which villages get (ibid).[26]

7.5 Relevance for Mtanza/Msona village

In this chapter I would like to illustrate what these hunting policies and park regulations mean for one of my study villages close to the Selous Game Reserve. As stated earlier on, the main feature of the Reserve is that it is the first and the largest in Africa, especially designed to protect a wide variety of wildlife habitats, including open grassland, Acacia, Miombo woodlands and riverine forests. The SGR contains some of the largest and most important populations of elephants, buffaloes, Nile crocodile and hunting dog in Africa. About 50 to 60 per cent of Tanzania's elephants are found in the SGR and there are also black rhinos remaining in isolated areas. The swamps form an important habitat for wetland plants, reptiles and resident and migratory birds. With its extensive area of Miombo forests, the Selous is one of the largest forest areas under protection. Due to its unique ecological importance, the SGR was designated as a “World Heritage Site” by the United Nations in 1982. As illustrated, the history of the Reserve goes back to the German colonial times but after Tanzania's independence, the final adjustment to the reserve's boundaries was made to protect the migratory elephants which were apparently on the increase.

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[26] The wildlife policy of 1998 defines a WMA as an area declared by the minister to be so and set a side by village government for the purpose of biological natural resource conservation.

For local villages such as Mtanza/Msona, this was a loss in access to land. The expansion of the Selous Game Reserve towards the neighbouring villages land contributed to the decline of farming land as well as other natural resources formerly held as common property by respective villages. Since the rural economy of the southern Tanzania is mainly centred on farming, the expansion of the Selous Game Reserve was a threat to the neighbouring villages, which had lost their land as well as control of the CPRs, which were carved from the village territory and declared as government property. The area which was left for the villagers seemed to have been not enough for their requirements. The villages lost the source of protein because the wild animals, which inhabited the village land, were declared government property and hunting in these areas without government permission was deemed illegal. The communities surrounding the Selous Game Reserve are in high demand for the wildlife products because livestock keeping hardly works due to the prevalence of the tsetse fly transmitted disease (trypanosomiasis). It is also not a tradition among the Rufiji people in these areas to keep livestock, particularly cattle. The locals used to rear small animals before the villagisation process in the 1970s but they lost their livestock as they moved to the new villages, which were set up at high altitudes. The loss of animals meant a loss of wealth as well as social identity. It is said that the climatic changes affected the livestock and it was wiped out within a short period. As the villagers lost their stock, the only alternative for protein supply was game.

The villagers are thus dependent on game meat. Since the colonial times (both German and British), people in Mtanza/ Msona had little or no legal access to game meat because they could not comply with the restrictive legal hunting regulations which barred them from using traditional hunting techniques such as bow and arrows and the introduction of hunting licences which the local people had to purchase from the wildlife department in order to access the hunting ground.

These communities are not only denied benefits from wildlife resources, but face infrastructure disadvantages as well. This is manifested by the poor access roads, non-availability of clean and safe drinking water, and inferior educational and health amenities. Matters are made worse as rural communities suffer from crop damages and dangerous wild animals causing threats and death to people.

Adding to the loss of benefits are high costs. It is estimated that more than a quarter of the food crops produced in the area are destroyed by wild animals, and an average of ten people are killed by wild animals annually in the area. In spite of these calamities, the law does not

provide for compensation for the damages inflicted. This state of affairs led to antagonism towards the reserve and conflicts between wildlife authorities and villagers, which resulted in toleration of poaching by the villagers.

The encroachment of the village land without compensation from the state for wildlife activities reflects the states engagement in wildlife conservation, at the same time ignoring the needs of the communities surrounding this Game Reserve. The state failure to address the needs of the villages neighbouring the Game Reserve has contributed to illegal hunting and human-animal conflicts in the area. The co-existing principle in the pre-Ujamaa time has been eroded because the communities bordering the Game Reserve are seen as enemies of the wild animals and the relationship between the Game Authorities and the villagers has badly worsened in the recent years. The consolidation of the scattered hamlets in the 1970s contributed to the states expansion of the Game Reserve. The Ujamaa Villages were to use the land, which was within their boundaries and anything outside was considered to be the government property. This is how the government came to expand the Game Reserve because much land was left unoccupied after the consolidation of the scattered villages into Ujamaa villages through the villagisation process. The villagers were denied rights of claim because the government had transferred all land and natural resources to the office of the president and the local people were to use the land but not to own it. The traditional lineage ownership of land was terminated after the introduction of the new policies contained in the Arusha declaration of 1967.

The poverty problems facing the villages closer to the Selous Game Reserve is as a result of less fertile land for cultivation and poor management of the wild animals which destroy the crops of the farmers in these areas. The establishment of the new Ujamaa villages on the higher points was for safety reasons but the livelihoods of the locals were not well planned. The new homesteads are situated in a sandy region, which hardly supports agricultural crops. The alienation of the fertile land in the lowland and converted to Game Reserve marginalised these villages livelihood. The struggle of the villagers to get access to former farming areas in the floodplain has been made difficult by the continued influx of the pests in area.

The villagisation and operation Rufiji in 1974 disrupted the social-political organisation of the Rufiji people and contributed to environmental degradation in most parts of the country. The mixing of ethnic groups with different social-economic structure affected most of the resources such as (fish and wildlife). The communities, which depended on wildlife as a source of livelihood, were either shifted to areas where no wildlife was found or to regions

occupied by the farmers or fisher. The local hunting institutions were transformed in the 1970s when the Ujamaa policies sidelined them from the management of the wildlife. The rituals, which were a way of trying to control hunting activities by a traditional co-ordinating body, disappeared. As game was now lacking, people had to look for alternatives such as fish leading to the decline of the game forcing the locals to look for alternative livelihood. The traditional religion and taboos attached to the game were done away and the conservation of wild animals became difficult, as the resource was open to commercial hunters.

The eating behaviour of the local people and traditional management centred on the production of meat and other products within subsistence economies changed as the market economy took centre stage for the game products. The Ujamaa policies forced the ethno-professional groups into organised villages and denied the traditional hunters more space for shifting and the concentration in one area lead to the degradation of the game.

The transfers of the community land to the office of the president reduced the powers of the local people to control and manage the game at their respective regions. The new policies, which followed the transfer of the resource reduced the hunting blocks of the local hunter forcing them to make, continued hunting in the same areas. These policies with continued amendment at last restricted the local hunter to possess a hunting licence to access the game. It was not only that the locals were denied to hunt in the protected areas but the restrictions were extended to areas outside the protected areas. The traditional harvesting of game undertaken through various techniques of hunting and trapping was strongly influenced by cultural factors and had little impacts on the game population (Songea and Nyanchuwa, 1996) which changed to modern hunting to meet the demands of the game products at national and international level.

Another important aspect is that game and trophy have become an important well gaining market with semi-mafia like structures which can become very dangerous for people to be involved: The poachers in the forests of Rufiji are well organised and their business works out perfectly. The political climate in the country creates room for the poachers, who were considered dangerous people by the resident members. The poachers have links with some powerful people in the government. Some of the poachers used to work with colonial regime and came to know the importance of trophies. The demand of wild animal products in the international market makes it difficult to break the syndicate of the Mafia group dealing with poaching. The exercise has reduced the number of big animals like elephants, white rhino, leopards and hippos in the region. The game wardens are badly equipped and their

communication facilities are nothing compared to the poachers. The poachers have strategic points to hunt, where they feel secure and complicated for the game wardens to reach. Since the community has been isolated and dismissed from the management and decision-making the poachers have moved closer to the villages and some do corporate with some villagers to gun down the animals. The locals find the new state institutions governing the management of the wild animals today are worse than the coloniser's laws.

7.6 Hunting after Ujamaa times in Mtanza/Msona

In Mtanza Msona it was difficult to obtain updated information on the hunting sector because of its illegal nature. However, it has become clear that the legal situation forces people to become poachers if they do not want to leave all the game to outsiders. The villagers trying to come into terms with the recent changes in the hunting sector still more problems are experienced as the policies are yet to be implemented. The locals try to act collectively to capture the benefits but this is made rather difficult despite of policies of decentralisation and favourable natural conditions for tourism. The village of Mtanza/Msona is in all seasons flocked by wild animals either from the Selous Game Reserve in search of water and pasture. The village being closer to the Game Reserve is suitable for game viewing by tourists passing through to the Selous Camps. On the other side, the village faces a continuous loss of crops and field damage because of its closeness to the Reserve. Many informants stated that it was difficult for them to see benefits in wildlife. Access to game is difficult for the locals as the hunting policies forbid them to enter the Game Reserve or to hunt in their community forests without hunting licences. The locals see themselves as being totally excluded from the management of the game, however, the wildlife policies have been changed in the recent years to accommodate the local communities in the management as well as sharing benefits and costs of conservation. But locals continue to complain of imposed unaffordable hunting fees. To obtain a licence is not easy because it involves many processes as well as extra money (Chai), so-called tips, to accelerate the issuing of licences. Otherwise the hunting season can come to an end without getting a licence if normal procedures are followed. This document must be collected at Utete the District Headquarter some tens of kilometres from Mtanza/ Msona. The villagers prefer to violate the law in order to survive instead to undergo all the process, which cost them more, than what they achieve from the game at the end of the season.

Especially for old men, there is another serious problem: Wildlife for them is declining because it is a gift from God for their survival but not for commercial purposes. They do not

see that the district council regulates this resource in the way it is supposed to be. Another issue is their view "wasteful" hunting of the wild animals by the poachers and the potential hobby hunters. These are only interested in the trophy, leaving the meat rotting behind. In the local worldview, this has affected the animals stocks not because of over hunting but because the animal spirits get angry and are now believed to hold back the animals. The traditional hunters as well as indirect game users are against the system because the game is not properly utilised as it was in the pre-Ujamaa time.

There is a new so-called Village Environmental Management committee (VEMC) in cooperation with the village government have tried to initiate a village camping site within their village land but the District Wildlife Department opposed their plans and considered them to be dangerous move for the game in the Selous Game Reserve. The wildlife department argued that the encouragement of setting up such camps in the village would promote illegal poaching within the village land and extending to the protected area (Selous). The camps were to influence the organised poachers to stay as visitors and at night to continue with their mission. However, a section of the villagers see the programme as a way of reducing the human-animal conflicts in the area, the other group see it as private business on the village land while the other section opposes to the programme. The internal opposition is seen as a contribution enhancing the wildlife department position on the planned project.

The division of the villagers concerning the establishment of the camping sites has made the implementation of the project difficult and costly for the village government because there is heterogeneity in interests. While people from Mtanza-Msona act collectively in order to protect their fishing areas the same is difficult for them when it comes to wildlife issues. The area is now easily accessible for poachers from Kisarawe district, which is the outlet route for bush meat to Dar es Salaam. Game has become more and more open access resource because the Selous Game Reserve is not well monitored anymore. Due to the structural adjustment programme (SAP), there are financial cuts in wildlife management. Scouts are not paid or not well paid and therefore monitoring of the reserve and sanctioning of illegal hunting is getting difficult. On the other hand, wildlife sells well in Dar es Salaam and a lot of commercial poachers are said to be civil servants who lost their jobs through the SAP and the following civil servants reforms. They are now engaging in hunting as an income alternative to support their needs as well their families. New infrastructure and new technology have also led to better access to wildlife resources by roads and using new automatic guns and electronic positioning systems instruments (GPS) to track down the animals and escape the game scouts easily or pay the game scouts off. In addition, animals seem to move out of the area for two

reasons: One is connected to the increased poaching, the other to climatic change because of less rainfall leading to less pasture for wild animals. This again opens up more problems with agriculturists as the wild animals start roaming outside the game reserve in search of the pasture and water in the process feeding on the agricultural products.

Hunting and the proximity to the reserve have now resulted in serious conflicts that have been breaking out between locals and game authorities. Local people feel that the wildlife belongs to them and that game scouts mistreat them. Locals see poaching as their right to use wildlife and have no interest in the protection of wild animals. The local people complain of the mistreatment from the wildlife department, which they view as the greatest enemy for their survival. These animals have been here for many years and we have been getting our vegetables but now everything is under the Game wardens. The behaviour of these wardens contributes to illegal hunting and this will only improve once the village receives its share. The game supported our protein supply and now our children are suffering because someone wants to conserve these beasts for foreigners. There are a lot of foreigners in our forest today but the villagers are restricted to harvesting for the pot. The Arabs come here with guns and after a while you see their vans filled with meat but the villagers receive nothing to reward them for being respective custodians.

Game wardens on the other hand see locals as a problem for the wildlife industry from which they are profiting. But there is evidence for locals that game scouts themselves are corrupt and take money from commercial hunters. At the same time, if there is a problem with wild animals, there is no compensation for crops and lives lost. There is also the problem that some villagers profit from commercial hunters while others see trophy hunting as a waste of resource. From the position of the authorities the villagers are blamed for encroaching game buffer zones formerly being the home of the wild animals. The expansion of farming gardens to such areas is attracting the wild animals to the farms while searching for grass. The smell of maize attracts wild animals such as elephants, despite being more than ten kilometres away. The human activities, which have blocked the animal corridor, seem to disturb the free movements of the animals during the migratory seasons. The animal's corridors remain the same from year to year and that is why most of the farm products are destroyed once the movement from the Selous Game Reserve to Ngumburuni forest (close to Ikwiriri) or vice verse takes place.

It is unclear if the full management will be assumed once the state will change ownership title to the village government on behalf of the villagers. The power relations between the

administrative bodies at the village level complicate matters and are seen as an advantage of the external resource user. People in Mtanza/Msona have failed to act collectively because government officers were not being helpful in the process, because there is too high an interest in game and trophy. Because it is close to a major market where these goods fetch a high price, it is worthwhile for outsiders to go there even if it is far away for them. Therefore, the village and additional stakeholders have a great heterogeneity of interest of different actors who also have different bargaining powers. Village government, scouts and non-resident poachers are the ones profiting, while other village resident members are unable to act collectively because they lack bargaining powers. The ordinary villagers protest against the management of the wild animals, which are locally considered the communal property but the profits are controlled by individuals. It makes no sense to suffer while other people are profiting. We thought that the newly formed scout's organisation was to defend the interests of the villagers but they are eating from the same plate like the Game wardens and other people in the management.

The power struggle and lack of internal cohesion has opened the doors of the illegal poachers coming from the neighbouring village of Kisarawe. Some of the local youths have been influenced to take to commercial hunting either directly or indirectly. These youths do cooperate with the external resource users who are well organised and possess guns and other devices which are better than the game wardens of the Selous. The economic constraints facing the locals have lured them to this dangerous business. The control of the game within the village land by the village government will be advantageous for the village economy but the outsiders will be forced to comply with the new regulation meaning part of the capital resource must remain in the village.

Although the state policies are advocating the conservation of the game, the loopholes in its administration make the entire management complicated and impossible. The state with weak institutions lacks the capacities to deliver services in all protected areas in the country. The expansion of the protected areas with limited resources and human capital to carry out its management makes these areas open to illegal resource users.

The weaknesses of the state institutions lead to organised illegal hunting in many parts of the protected areas or national parks. The poachers' institutions seem to be better organised than the state institutions, which have reduced the state powers in game management. These resource poachers with powerful devices in communication can monitor all the movement of the state officials and animals while carrying on their activities. The game product market is

controlled by these illegal poachers many of whom are working with the state officials and that makes it difficult for the state to sanction because its own people are involved in the operation. The state, being poorly equipped and lacking grass root support from the neighbouring villages, will never win the war against the illegal poachers unless the communities are recognised as sole owners and managers of the game.

The continued interaction of the local youths of Mtanza/Msona with the illegal poachers from the Kisarawe districts jeopardises the opportunities of the village government to fight against the external illegal poachers as the information is passed to the poachers before the action takes place. The poor organisation and lack of modern facilities by the village scouts to trace the poachers in the forest makes their work difficult and dangerous. The collective co-operation and co-ordination fail at the grass root level as the villagers are struggling to feed their families. The collective management will only work in this village once the villagers will get tangible benefits from the game. Although the village environmental management committee was set up in 2002, the appointees' terms of work are still open. The problems facing the management of the committee are connected to false promises which were made by the wildlife department. The majority of these appointees have turned down their tools of work. It is pointless for them to risk their life and waste time while their statuses are not recognised locally. The management organ lacks support from the villagers as well as from the village government and its struggle to bring the culprits to book is jeopardised because of corruption. The empowerment, separation of power and clear terms of work for the administrative organ will motivate the VEMC to reserve the present illegal poaching, unsustainable utilisation of the game resources within the village land into legitimate and controlled utilisation.

7.7 Conclusion and recommendation

The breakdown of the local institutions and the transition of the government regimes have affected the wildlife contributing to mismanagement of this resource at the local level. The exclusion of the local people from direct management of the wildlife has affected their livelihood leading to illegal poaching. The clear rules, which governed the management and use of the game, are lacking today because the dismantling of the traditional institutions and the consolidation of the villages complicated the management of the resource. The failure of collective decision making as it was in the pre-Ujamaa time paved way for illegal poaching and unsustainable use of the resource today. The newly crafted policies' failure to address the needs and wants of the people living within or bordering the protected areas contributed to the

human and animal conflicts, as these people were denied their customary rights. The introduction of the permits and hunting licences worsened the situation as the locals saw these papers as an insult from the state. They continue to indulge in illegal poaching and co-operation with the commercial hunters in order to prove their strength to the state.

The local people or communities should get direct tangible benefits from the wildlife in the protected areas where they live. The failure of the state to explain to the local people the importance of protected areas and its meaning to their socio- economic condition will never support the conservation of the game. The change of attitudes towards wildlife will take place once the locals start receiving direct benefits from the state leading to better interaction between the wildlife authority's personnel and rural people. The future of the game will be determined if the state accelerates the demarcation of the village boundaries and registration as well as issuing the respective villages title deeds for ownership. The current law is weaker and failures to recognise the locals residing closer to the protected areas in the management of the game and profit sharing.

In turn, villagers living near protected areas will receive benefits directly from the local government. Habits of traditional hunters, which are beneficial to the community and for conservation, must be adopted. Conservation must aim to provide the elders who have coexisted with wildlife for long periods and can enjoy employment to communities of hunters living around wildlife areas, as these benefits in turn. The involvement of the villagers in the decision making and allowing the traditional hunters to get meat for the community will bring the community members closer to the national parks and the animals will be protected as was the case before the policies closed the doors for the traditional hunters. The culture which was attached to the wild animals was the best method locally for conservation and its revitalisation will be of benefit to the game and the user.

The behaviour and attitudes of the locals towards the game will be improved through the devolution of power to the local communities to take full management of the resource. The introduction of the wildlife management areas (WMA) in the region will change the entire management of the game and the locals will benefit directly from the profits accrued from revenue collection. However, there are too strong economic interests and too high a heterogeneity in interests as well as differences in bargaining power as to make collective action possible under these conditions. The villages in the northern part of the Selous Game Reserve have profited through the WMA (see Ashley et al. 2002). The closeness to semi legal up to illegal trade networks through the neighbouring district as well as the violent nature of

this business are other obstacles to achieving positive results. There is a doubt if with collaboration of the central government and local government the management of the wild animals will be brought under control and the illegal poaching will be minimised. Well-formulated policies that balance development and conservation are needed in the floodplain but at the same time a strong and corruption Free State is needed to fulfil its duty. Villagers alone are too powerless in such a setting.

Therefore it has to be seen, as well from the experience of the other WMA villages if the gains from the community based natural resource management (CBNRM) measures are enough to outweigh the power, incentive and distribution issues to be addressed by locals and the government. Hunter's weapons must be inspected because some of these hunters today have short guns which are dangerous and sometimes have more bullets than allowed. The government must support the local hunters but not the foreigner because of material gains.

The legislation of hunting big animals like elephants and crocodiles must be revised because the local communities do not benefit from such animals. The licence costs must be increased for the foreigners and all the licences to be issued by the village government to make monitoring and sanctioning easy. The village scouts need more skills on defence against the dangerous poachers in the village forests. The collaboration between the game warden and the village scouts must be solidified for easy communication to counter check the movements of the illegal poachers both in the game reserve and the village forests. The protection of this mobility resource from both sides will curtail the evil plans of the poachers and the sustainability of the resource will be realised. The current conflicts between the Game reserve wardens and the communities bordering this habitat must be solved as quickly as possible for the safety of the wild animals. The locals affected by damage of life and property by the wild animals must be compensated immediately, otherwise illegal hunting will continue and the affected people must have a livelihood.

8 Pasture in Rufiji floodplain

In the following chapter I would like to give an account of the pasture institutions and the changes which have taken place among the Barabaig pastoralist of Hanang district. This pastoral group has moved to Rufiji floodplain in the recent years due to climatic change and lack of sufficient pasture for the animals in their traditional territorial boundaries. The CPR pasture, which was traditionally managed as the herders strictly applied the rules of access, failed to maintain the collective action due to external pressure from the government institutions. The economy of the Barabaig is based on cattle; however, there are changes which have taken place since the alienation of the rich pasture grounds in the Basuto plains in the 1990s. Access to these pastures had been regulated within customary land tenure concept, which allowed only the members of the clan to access the resource.

In the first part of this chapter a brief account of the pasture ecology in the Rufiji floodplain and climatic conditions is given linking it to the availability of grass in this region. The history of the Barabaig is summarised and the role of cattle in their economy emphasised, reflecting the importance of cattle as an economic factor and social security for this pastoral group. The Barabaig traditional methods for the selection of pasture have been analysed giving more emphasis on local months counting and how it assisted the herders to avoid overgrazing and water logged pastures in the wet season. The traditional Barabaig methods of rangelands classification and traditional animal treatment as well as diseases control and division of labour among sexes have been tackled in this chapter. In the last part of the chapter the emergence of new pasture institutions, which were not existing in the Rufiji floodplain have been represented well as the new Barabaig strategies of surviving in the new settlements. Lastly, the chapter ends with the combined conclusion and recommendation.

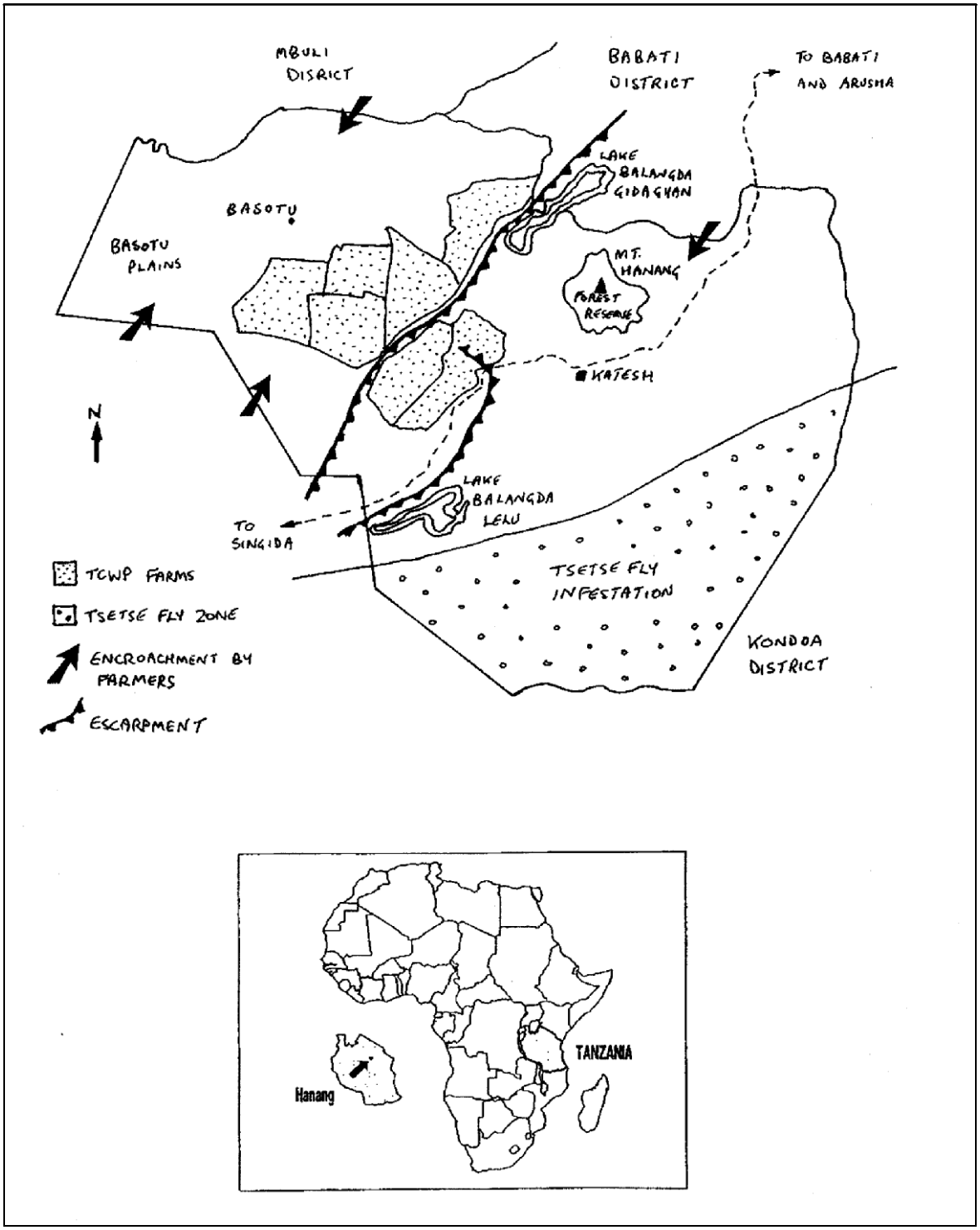
8.1 Ecological basis of Pasture

The climatic and soil conditions as well as the availability of rain determine the growth of pasture in Rufiji floodplain. The floodplain where this study was done is predominated with light sandy soils in the higher places and valleys are covered with clay type of soil supporting agricultural activities in the recession season after the flooding period. Fresh pastures are available after floods have retreated in the month of May and June but their growth is shorter as soils in the area dry up quickly. The looseness of the soil texture in this semi-arid region makes the life span of the grass too short as the water retaining capacity does not last for a long a period.

The high temperature in the floodplain as well as the whole of Rufiji district contributes to high evaporation in the floodplain floor opening the soil and exposing the grass roots. The floodplain is full of pasture in the rainy season, which starts in December and continues to the end of April. During this period, the pastures are naturally conserved as the livestock and wild animals concentrate on higher areas because the floodplain floor is flooded and the soils are saturated and considered to be dangerous for the livestock as well as wildlife. In the wet season commiphora, Acacia and perennial grasses such as cenchrus ciliars and chloris spp typically dominate the floodplain. The multiplications of grasses in the rainy season are quick and even the higher areas area covered with grass. The natural pasture provides a high percentage of the feeds requirements of ruminant livestock and wild animals in this coastal region of Tanzania. It is very diverse owing to the wide variety of ecological variations throughout the district as well as the country. The chloris grass, which is associated with tree or bush steppe, is widely spread in the floodplain. The altitude and rain conditions in the Rufiji floodplain support its growth. The grass is in plenty in the rainy season and reduces in the dry season. The outbreak of fires in the dry season is common in the floodplain. The pastorals as well as the farmers believe that setting fire is one way of cleaning the area to allow the new grass to grow when the rains start. Although the fire is destructive, the community members prefer to use it for clearing the farms and pasturelands. The fires scare the wild animals from coming closer to the residential areas and farmland as well as reduce the spread of ticks in the grazing lands. The seasonal variation of pasture in this semi-arid area will only support fewer animals per hectare to avoid pasture degradation and soil erosion. The seasonal mobility of the pastorals and the control of the carrying capacity will promote the pasture ecology in this area, otherwise long concentration of animals on one place may contribute to over grazing leading to permanent destruction of this fragile ecosystem

8.2 The Barabaig pastoralist

Map 5: Basuto Floodplain in Hanang District



Source: Lane, Charles 1994

The Barabaig who are the main focus for this chapter are Niloticus-speaking cattle pastoralist of living in north central Tanzania. The Barabaig are a population of 30'000-50'000 people who subsist mainly off their cattle, goats, and sheep in the savannahs of northern Tanzania.

They are divided into small sub-groups spread throughout this region and there identify is related to the Datooga the larger ethnic group, however, they are linked to this group the Barabaig have their own dialects. The Barabaig are said to be proud people, with a reputation as fierce warriors. Traditionally, young men had to prove their brave by killing an "enemy of the people" defined as any human being not a Datooga locally, or one of the dangerous wild animals such as elephant, lion or buffalo.

The main concentration of Barabaig is in the Hanang district of Arusha region but the number of Barabaig there varies because of their nomadic habits influenced by seasons change The Barabaig are said to worship one God, Aseta, but they believe he lives far away. His eye is the sun and his priests are the witch doctors. The witch doctors have very strong spirits and can communicate with the living even after the witch doctor's death. They also practise ancestor worship. Although the Barabaig live in Hanang district, the Basuto plain is also considered as the homeland of these pastoralists. In recent years, small farmers and large commercial estates have squeezed Barabaig off their grazing lands. These activities have occupied the prime land of the Barabaig who now have been forced to move to various regions in search of animal feeds.

The disruption of the traditional pastoralist's institutions through the new commercial projects has contributed to the changes in the market economy and has increased the demand for animal products. This has led to more investment in this resource enabling new resource users to profit from the opening of enclosed ranges. The Barabaig who used to have large herds, as some households having more than 50 mature animals per head, have been reduced due to lack of space as the traditional ways of grazing are no longer applicable in the area. Since the area is in the semi-arid region, the free movement of the animals used to avoid overgrazing through the selection of ranges and separation of the animals through the sizes and species. The indigenous knowledge of pasture management was applied and implemented through the traditional rules. The ecological balance was the priority of this pastoral group as the pasture management was embedded in the community's culture and norms. As it will be noted in the next chapters, the Barabaig livelihood depended primarily on the animal products, which later changed as new market opportunities inferred with the traditional economy. The Barabaig can recall the worst moments when some of many households lost their herds and some were not able to build up their herds to the same level without help from those who managed to survive the tragedy. The tragedy, which has forced many of the Barabaig to think of alternatives other than animal rearing, has been connected to the frequent outbreaks of animal diseases due to congestion in one area and lack of sufficient pasture and water. The opening of the former

grazing areas has contributed to continuing cattle rustling, which has affected the economy of Barabaig drastically. In the traditional institutions the Barabaig used to co-operate for mutual benefit but which has changed due to economic constraints. The changes in the cattle economy are now pushing more individualistic or small group's views of cattle as private property versus communal property.

This can be supported through the evidence deduced during the field study. The interviewed pastoralists reported that social cohesion, which existed back in the 1970s, has declined gradually as the community rules on pasture management have been abused through commercial ranging and local residents shifting from pastoralism and now practising farming as a coping strategy. The conversion of the limited grazing grounds into farming land has caused internal differences, which has lead to the split of the Barabaig into small groups. The collective co-operation is not an issue any more because the personal demands have overcome the collective action. Today this pastoral group survives through private engagement and that is why the problems facing the Barabaig cannot be solved collectively because of strong external influence and personal desires of the local residents who have seen the new market economy as the only way to improve their livelihood

As it will be explained in this chapter, the out-migration of the Barabaig from their prime lands in the Hanang district is related to climatic conditions, policy changes and the new internal political system in the Tanzania. The Barabaig who are now living in the Rufiji floodplain made their way from the Basuto plains as the conditions of their animals continued to worsen due to lack of water and pastures in both the highlands and lowlands in the Hanang district. The dismantling of the traditional pasture institution, which had catered to the management of the pasture for decades and offered fair distribution of the resource to all clan members, is seen as the worst enemy, which robbed the Barabaig of their long term livelihood and security. The introduction of the new state institutions contributed to the grabbing of pastoralists' land reducing their production by pushing them to the most marginalised areas, which were not able to support their economy.

The Rufiji Barabaig, as we can call them today, are said to have undergone some hardships such as wild animals attacks, animal theft and harassment from the local residents. However, the situation seems to change as their integration continues to take place and the local resident's doubt their stay in the floodplain. The interviewed Pastoralists who came to Rufiji floodplain in 2001 commented that their stay in Rufiji had a difficult start but now the local residents' behaviour has changed as the exchange of animal products as promoted friendship,

giving the pastoralists a say in the social gathering. Now the attitude of the locals has improved as many of the Barabaig today have made friends in Rufiji and can be seen moving freely in the villages searching for local liquor. The economic stability of the Barabaig in the region compared to the Rufiji people is also an advantage for the newcomers to have more powers to protect their property, despite being a minority in the area. The economic constraints facing the local residents for the last two decades have forced the young men to protect the interests of the newcomers for favours. According to the recent village land use plan, the village council has divided its land into two major blocks, one for livestock owners and the other for crop farming. This was done objectively to avoid the possibility of land use conflicts between the farmers and the pastoralists, which were experienced at the arrival of the pastoralists in the region. The subdivision of land into blocks has given the Barabaig the rights of pasture use in the new demarcated areas but ownership of the land remains in the village government, which is locally the custodian of all natural resources including land according to the land act of 1999. More information on pasture use in the floodplain will be outlined in the new emerging pasture institution section in this chapter.

8.3 The traditional selection of pasture lands

In this chapter the traditional indigenous knowledge on pasture selection is outlined and its importance in the management of the CPR in the former grazing grounds in the Hanang district and how this method has assisted them to make proper pasture selection in their new grazing grounds in Rufiji floodplain.

The Barabaig used traditional methods to assess the climatic conditions of an area before moving their animals for grazing. Traditionally, the Barabaig sent out elderly people to targeted grazing grounds to examine the type of grass, soils and trees as well as the availability of water. These factors will be dealt in the next chapters and their importance linked to animal rearing. The Barabaig, who the researcher interviewed in the Rufiji floodplain, said the constraints to livestock keeping in many regions is the climate, which was pointed out as the most critical factor affecting animal performance and productivity. The pastoralists mentioned that drought was a more limiting factor for animal productivity since it affected significantly water availability compared to pasture availability. In their opinion since they settled in Rufiji floodplain, they have never experienced a consistent shortage of pasture. The pastoralists wish to stay longer in this region as their movement is easier than that of northern Tanzania, which has been grabbed by the wealthy and powerful individuals for commercial farming and in the process the animal resources have been reduced, forcing

them to move out of the plain. The pastoralists admire the Rufiji floodplain because the climatic conditions in this region favour cattle keeping, as there are plenty of pastures and water. The problem of tsetse flies is felt more during a dry spell when the livestock productivity is seriously affected by trypanasomiasis, a disease caused by tsetse flies. There are fewer flies in this region compared to the southern part of the Basuto plain where the Barabaig relocated to after their displacement from the grazing grounds in the Basuto floodplain. The Barabaig applied their traditional knowledge to monitor the changes of the climatic conditions and that used to save their animals from insect attacks and to locate the rich pastures through a rotation system.

The adult Barabaig, both female and male, through experience and long-term interactions with their natural environment in the semi-arid region in northern Tanzania, had built methods, which were used as indicators of the weather variability to monitor the climate.

8.4 Traditional counting of months

Pastoralists have a traditional method of counting months of the year. They use this method to tell onset and ending of rains and dry spell. The interviewed pastoralists said natural signs for them are very important as they indicate the start and the end of an event. The traditional methods were widely used by this pastoral group to monitor the changes of the resources. The Barabaig used stars to indicate rain. A popular star called ‘Ejaega’ tells the trend of rains in a certain period. When it is in the west, it shows that it is going to rain, while when it is in the east, it indicates that rains are moving away. The use of specific birds was part of the natural signs of information. The Barabaig pastoralists used a special bird sound to predict the onset of rains. When the bird locally known as ‘doloda’ or ‘mumbi’ in Swahili, gives this special sound, it indicates that the rains are near. In these ways the Barabaig used to develop strategies of resource management in their former semi-arid region. The rainfall pattern was crucial for these pastoralists as it enabled them to plan their movements for better pastures. The table below shows the months of the years and the changes of rain patterns, which used to guide the Barabaig movements and pasture management. The methods are still applied in their new settlement in the Rufiji floodplain but the interviewed pastoralists commented that the movement is slow and short, as the pastures are available within a short distance.

Table 20: Rain fall pattern in Rufiji floodplain

Months	Season
October-December	Short rains
January-February	Dry spell
March-June	Long rains
July-October	Dry spell

Source: Meroka, Patrick 2004

Both female and male Barabaig interview respondents consider climate to be a decisive factor in livestock production. They monitor changes in climate mostly by observing changes in quantity, distribution and reliability of rainfall. The other aspects mentioned to manage livestock productions are: The prolonged droughts cause disappearance of perennial grasses, increase of annual herbs and woody species. The forage abundance is related to high moisture content resulting from good rains contributing to animal performance. The bad weather is always related to reduced animal productivity, increased animal diseases and deaths, remarked the elderly Barabaig. The scarcity of water can affect forage availability and animal performance, forcing the frequent movements, which bring the pastoralists into loggerheads with their neighbours especially the farmers.

The weather changes for the past years were said to be unfavourable to livestock productivity in the northern part of Tanzania as the rains were erratic and inconsistent and the drought persisted longer than it was expected two decades ago. Temperatures were high resulting in poor growth of pasture and water scarcity for both livestock and humans. Water availability was considered as the most critical factor for livestock keeping in the ancestral land of the Basuto plain and the decline of this resource is connected to commercial irrigation.

8.5 Classification and suitability rating of rangelands

The Barabaig pastoralists use various criteria to classify ranges and suitability ranking. These include vegetation, soil and water resources (see Table 2). The rangeland is classified according to the dominant vegetation species, grasses and trees. Grasses with virtually no trees dominate grasslands known as “moheda”.

The grasses with few trees are called ‘getaghula’ while bushes are known as ‘manang’aneda’. Most of the female cattle caretaker’s respondents argued that ‘moheda’ was the most valuable

rangeland for the mature cattle. However, there are some livestock species like goats, which flourish well in ‘manang’aneda’. The pastoralists interviewed were also able to classify rangelands according to the dominant plant species found in each of the above-mentioned rangeland as follows:

The ‘Nyasichanda’ and ‘gharosichanda’ dominant open areas with no trees (Moheda) while ‘Mbarijanda’, ‘sabaleda’, ‘ngarajika’ are more common in areas with grasses and few tree the (ghetagula). The ‘Haroroida’ and ‘manida’ are common grasses in bush rangelands (Manangaeda) and some grasses are being introduced in new areas through animal movements, said the pastoralists.

There are new grass species, which have just currently been found in Rufiji (originating from the northern part of the country), which the Barabaig believe to have been produced through animal excreta. The following factors are traditionally considered important in the assessment of rangeland condition by the Barabaig: Both male and female adult Barabaig perceive the knowledge of botanical composition as of particular importance in rating range suitability for livestock grazing. This knowledge is used to tell dominant species and the identification of preferred and undesirable plant species. It is acknowledged that good botanical composition results in high milk production and high growth rates of grazing animals.

During the rainy season flat lands are filled with water and become muddy. This leads to poor pasture growth and limited accessibility by grazing animals. In this case hilly areas are preferred during wet seasons while dumpy flat areas are very suitable during the dry season.

Looking at the frequency of diseases incidences when a certain rangeland is used also assesses the quality of rangeland. The high occurrences of diseases indicate poor rangeland suitability. It was mentioned, for example, that many pastoralists avoid bushes or huge forest areas, as they are associated with tsetse flies. The range-lands associated with ticks and tsetse flies are also regarded as bad range-land and unsuitable for animal rearing. The suitability ranking of rangelands by the Barabaig is summarised in the table below.

Table 21: Barabaig traditional ranking of range-lands

Grade	Characteristics
Best	Enough water and pasture, the absence of diseases especially ticks and tsetse borne and absence of predators
Good	Moderate water and enough pasture, little diseases challenge and no predators
Fair	Moderate to little water, average amounts of pasture, tolerable diseases challenge and less predators
Poor	The presence of diseases, lack of water and pasture and a lot of predators

Source: Meroka, Patrick 2004

The selection of the rangelands was done through soil assessments. Focus group discussions during this study revealed that soil was used as an important tool in the assessment and monitoring of the range condition. Certain soil characteristics are considered in the assessment of the status of the rangeland. The Barabaig, both men and women, classify soils on the basis of colour and texture, which are related to both quality and quantity of the pasture for healthy animals. The soils were classified according to the local names and their characteristics. In table 3 the soils are classified and their suitability in pasture productions.

Table 22: Barabaig soil classification

Soil type	Local name	Perceived use	Suitability ranking
Black/clay	Moheda duu	Produces more grasses, which are rich in minerals being salty. Associated with average fodder production and average livestock performance.	70%
Red soils	Nganyida esh	Produce a lot of grasses usually with low palatability.	30%
Sandy soils	Nganyida arara	Are disliked by the pastoralist as they make livestock coats to appear red.	0%

Source: Meroka, Patrick 2004

Although the soil fertility is not an important criterion for the assessment of the rangeland condition, it influences the quantity of grasses available on each rangeland. The following were mentioned as indicators of either fertile or poor soil: Generally black (clay) and red (loam) soil were mentioned as fertile soils while the white (sandy) soil was generally regarded as poor fertility soils. The availability of huge trees and greener plants in an area meant that the area was rich in soil minerals. The grassy nature was associated with food availability as

they support the growth of certain crops, which implicitly shows that the area is rich in soil nutrients. In case of declining soil fertility, the ‘morani’ and some few selected elders scout for better pastures.

The availability of water was considered to be very important in rating range suitability since its availability was considered the most critical factor for livestock keeping. Lack of water was associated with poor animal performance; low milk production and water related diseases like constipation. The Barabaig uses indigenous techniques as indicators of water availability in certain areas. The presence of special grasses called ‘Sharahida’ can tell that water is easily available in the area concerned. The trees, which are traditionally known as ‘Maghaenda’ or ‘Mikuyu’ in Swahili, are good indicators of shallow water table in the area. The high soil moisture in mountain areas is always regarded as a good sign of water availability. It is not only the availability of the water that is important but also the quality of water is taken into account while ranking ranges suitability.

The Barabaig are concerned with the quality of water, which in their view, is associated with animal performance in terms of the quality of milk produced. Poor quality water was associated with disease incidences. For the Barabaig good water quality should have a salty taste which is preferred by grazing animals and an average temperature not too cold or too hot. The herders said cold waters have negative impacts on the animal health. The quality of poor water was recognised through the blue/ green colour, which is associated with cattle diseases. However, salty water is preferred while too much salty is also a constraint to animal health and muddy water is sometimes associated with high volume of helminthes.

Barabaig in Rufiji floodplain assessed their animal performance using the various criteria (see table below).

Table 23: Animal Performance

Criteria	Priority	Respondents	observations
Body frame: big ,long	1	21	High price, meat
Growth pattern: Fatness	2	9	High price, good meat, and early maturity
Coat and fur	3	8	Rough coat indicates the presence of diseases
Movement and gait			Slow movements is associated with sick animals
Big udder	5	6	Indicates plenty of milk

Source: Meroka, Patrick 2004

The performance criteria were gender oriented and it emerged that men had different opinions as women. The men put more emphasis on the other four criteria in the table above but most women considered big udder and good milking ability as the most important criteria. The above attributes also relate to the rangeland conditions, namely, the availability or lack of water and pasture that are critical for increased animal productivity as they may affect even unborn calves sometimes causing abortions. These attributes like size, growth pattern may be determined by generic factors from their ancestors said one of the elders.

Improved range management always goes hand in hand with the use of good quality livestock. In order to get good quality animals, the animal selection and breeding is crucial. Barabaig men select breeding bulls as well as cows, although the selection of bulls is considered more important. Selection of animals for breeding is always done in a period of two years before the male starts mating. Unwanted bulls are castrated or sold to the slaughterhouses. Interviews showed that the same criteria are used when selecting bulls and cows (see table below).

The Barabaig men herders used the given criteria in the table for bull and cow selection. Men alone purely do the decision of animal selection.

Table 24: Animal breed section by the Barabaig

	Priority	Respondents
Criteria		
Parental line history	1	23
clan	2	11
Body size and appearance	3	9
Temperament	4	7

Source: Meroka, Patrick 2004

Apart from animal selection, the herders monitor the health of their animals on a daily basis. The respondents said the animal appetite is observed through feeding behaviour, hair coverage on the body and activeness of the animal while in the ranges. According to the Barabaig, a healthy animal usually has a good appetite, feeds well and has a shiny fur that covers the entire body. On the other hand, an unhealthy animal is dull, has less appetite and the hair of the skin is usually rough. The shape of the animal stomach was a traditional method used by the Barabaig to assess or diagnose animal diseases.

Cattle herders mainly do the 'Gharemanga' animal health monitoring during the grazing and water drinking sessions. Women can also do late evening diagnosis of sick animals during milking sessions. Women usually use milk production to monitor animal health since healthier milking cows produce more milk than sick cows.

8.6 Traditional livestock treatment

Despite the use of modern healthcare, pastoral Barabaig also use their knowledge of livestock therapy. The Barabaig, like the Masan, have an extensive knowledge of the diseases affecting their animals, as well as their causes and remedies. The practice of ethno veterinary is more common amongst the elders in the community even though they are not immediately responsible for the care of the animals. This is due to the fact that they have a far greater experience of diseases and a wider knowledge of the treatment methods. The young warriors 'Gharemanga' and male adults 'Kwarukwa' treat the adult grazing animals. The female adults, apart from preparing the drug concoctions, usually treat young and sick animals remaining behind when other animals are taken out for grazing.

8.7 Range management

Traditionally, the Barabaig divide rangeland use into two major categories depending on the season and the nature of the climate. These are dry season's pastureland and rainy season's pastureland. Principally, there are no formal laws determining this pattern of use. Their use is governed by traditional institutions mostly decided by the council of elders; the 'kwarukwa' who ensure that grazing is undertaken for the benefit of the entire pastoralist community in the area. It is the role of these elders or heads of households to decide which part of the rangelands in the village proximity is suitable for grazing at that time.

Some areas are deferred for future use, usually during the dry season. In this case special areas are reserved for weak animals and calves. The areas known as 'radaneda' are always close to Barabaig homesteads and are considered rich in both pasture and water resources.

8.8 Importance of Controlled burning

Controlled burning is another management strategy used by Barabaig pastoral community to improve the quality of their rangelands. This is done mainly to allow the regeneration of new pasture. The decision to burn a specified area is usually made through the meeting of elders (usually only males). The respondents narrated several advantages associated with burning. The burning was associated to the reduction of ticks, which were believed to have increased during the rainy season. It was argued that the green pasture brought about by the burning increases the efficiency of mating of bulls. The green pasture is considered important for increased milk production and burning is also considered important for conservation purposes as it allows the regeneration of plant biodiversity in a rangeland.

Burning is mainly done in September or October to take advantage of the short rains, which normally come in October. Another argument for October burning is that it assures effective control of ticks since grasses are dry enough to accelerate burning processes hence killing all the ticks.

8.9 Decision-making in the Barabaig community

Age and gender traditionally vest in leadership among the Barabaig communities. Authority tends to be concentrated in age groups above the warrior 'gharemanga' age set.

The roles and duties of each age set are summarised below:

Table 25: Gender decision making

Status	Age	Local name	Roles and duties
Male children	Below 18 years	Balojika	Grazing goats and calves
Youths (warriors)	Over 18 years	Gharemanga	Take care of security of livestock and "bomas"[27]. cattle herding changing cattle direction in case of pasture scarcity
Male adults (fathers)		Kwaruka	Overall in charge of the family To decide all matters related to cattle keeping dictates the use of money from cattle selling despite the fact the wife is the custodian of the money have final say to family and social matters ranging from range management, cattle keeping and conflict resolution in the family
Women			
Mother	Married	kademka	All domestic chores milking of animals, selling milk Cattle herding in the absence of children. skinning planning the use of milk proceeds (full control) Keeping money accrued from animal sales (joint decision making when large sums are involved). Selection of milking animals.
Youth female	Below 20 years[28]	Hawega	

Source: Meroka, Patrick 2003

[27] Boma: commonly known as a household, a Boma in Barabaig context is a principal unit of production comprising of various independent polygamous families controlling a few several hundreds of cattle between them. Blood or marriage usually relates members in the boma and have rights to access the pasture lands within the lineage boundaries. The management of the pastures used to be under collective action but the changes taking place through external forces have intefered with tradition institutions, which governed this resource before.

[28] Women do not usually get married before they are 20 years of age.

8.10 Gender and decision-making

The gender roles have been clearly summarised in table 25 above. This study revealed that despite the fact that the Barabaig women play significant roles in livestock keeping, they are given an inferior status in the decision-making system and are excluded from getting access to property. Women have no legal claim to livestock property whether it is cattle, sheep or goats.

There are various traditional legends and cultural premises explaining and legitimising why women do not control livestock property fully. The cultural construction of gender inequality in property relations concerns women's procreative resources and close affiliation with the children and that gives the men powers on issues dealing with material possession. Women show preoccupation with matters related to the children and the household, while men are more concerned about livestock.

In a Barabaig community, as stated earlier, female-male relations are unequal in the sense that women are subordinated to men. This makes the process of knowledge sharing difficult outside the household. At the household level husband and a wife/wives interact with other family members in the production processes especially on livestock management.

8.11 New emergence of a CPR

The problems facing the pastoralists' communities today can be related to problems other ethnic groups are undergoing despite their diverse economic activities. The internal transition of Tanzanian politics in the post independence period contributed to loss of customary land rights throwing away many people from their ancestral land. The change of the ordinance act of 1921 introduced by the colonial government, which granted occupancy through customary land rights in Tanzania, affected the traditional societies in the rural areas. The Ujamaa, undoubtedly the most significant political event since the Second World War, was related to the nation-wide programme of villagisation (Ujamaa) which took places in the 1970s. The Ujamaa process moved the entire rural Tanzanian population into co-operative villages and under "Operation Vijijini", when land was redistributed and several million peasants and pastorals resettled in new compact villages often under duress. The operation Vijijini had social and economic effects both on farmers and pastoralists. The redistribution of land in the new system caused a lot of damage mainly to the pastoralist communities as their mobility was halted and forced to concentration areas. The reduction of grazing land through the consolidation of the villages affected the traditional system of resource use in the former grazing grounds in the north.

Although the floodplain pastoralists were left somehow unaffected by Ujamaa, the post Ujamaa development projects in southern areas, such as the Kondoa wheat scheme forced Barabaig pastoralists to relocate from the plain to the south woodlands, which are affected by the tsetse flies. The Barabaig have lost part of their livelihood and many households have been forced to diversify or move to the cities as gatekeepers. The liberalisation in the economic aftermath of Ujamaa during the 1980s encouraged the expansion of agriculture to previously uncultivated areas. This rapid expansion of pioneer settlement accompanied by deforestation and increased livestock numbers, inevitably resulted in problems of soil erosion, overgrazing and decline in fertility. The recent surge in the region's population due to natural birth rates coupled with in-migration also resulted in a massive expansion in cultivation on the plateau, spilling over to the valley land formerly used exclusively by the pastorals for grazing have been successively appropriated by commercial plantation and peasant farmers. Some land has been taken by the state for forest reserves, national parks as well as protected game areas. These processes of pastoral dispossession and post independence agricultural colonisation have had negative impacts on the Barabaig pastorals forcing them to look for water and pasture elsewhere. Apart from pasture shortage caused by unreliable rains, it was also mentioned that Hanang was experiencing the problem of overgrazing and land shortage caused by the acquisition of large areas of land in the Basuto floodplain for commercial wheat complex which displaced the Barabaig pastoralists from their dry grazing land.

High disease incidences like Trypanosome, Diarrhoea, East Coast Fever and Foot and Mouth Disease were also mentioned as reasons for their out-migration. It was thought that moving the cattle away from home were a lasting solution to the problems, which this pastoral community was facing. The pastoralists said their cattle have been suffering from various diseases and most of the households lost many of their animals and are most likely to restart from zero to rebuild the stocks.

The introduction of commercial irrigation farming in the Basuto plain is considered to be the last nail, which disrupted the livelihood strategies of the Barabaig pastoralists. The area, even though semi-arid, has attracted wealthy immigrants from all over Tanzania and cross international borders. The irrigated lands are located at the interface between the pastoral and agricultural communities and owe their existence to perennial springs and extensive wetlands. The practices of agricultural activities on the plateau have a direct bearing on soil fertility and hydrological regime, which supports this intensive, irrigated agriculture at the escarpment foot. On the other hand, the pastoralists in the plains are in conflict with the village cultivators over this wetland, which comprise a key resource in their grazing system.

The degradation and decline of the grazing grounds of the Barabaig in northern Tanzania has spilled over to other regions, which were formerly used by other economic activities than pastoralism.

The livestock, which is a social and economic capital for the Barabaig, is under stress through the continued migration and the hostile climatic conditions in the new environments. This natural capital decline has affected the household economy of the Barabaig. The interaction of the Barabaig with other ethnic groups on their way to the new sites has contributed to the change of their social capital contributing to division of labour, which never existed before.

The traditional institutions of pasture management in the Basuto plains have been transformed following the out-migration of the Barabaig pastorals to Southern Tanzania especially Rufiji district. The interaction of this ethnic group with Rufiji people in recent years has contributed to their social-economic change in the Rufiji floodplain. The new pasture institutions are emerging at the grassroots where the local villagers in the floodplain are trying to craft new rules to cater to the appropriation of pasture based on local traditional institutions. This new pasture institution is intended to incorporate the new resource user, the village council as well as the district council. The exclusion of the pastoralists from the management of pasture is not possible because the Tanzanian government law allows all citizens to get access to natural resources in the country.

Hence, the presence of the Barabaig in Rufiji district is legally justified and politically correct. The Rufiji people, however, see the Barabaig as a threat to their ecosystem and livelihoods, which were formerly enjoyed by the locals themselves. Now the interdependent system is unavoidable within a rapidly expanding market economy.

The village governments in the floodplain are now planning to set aside land for the newly pastoralist community to access through payments. The officials argue these newcomers have degraded their ecosystem and now things have turned worse for them forcing them to run away. The profits the Barabaig are making from the sale of the animal products are privately owned but the pasture resource is considered to be a village property. The village government agenda to introduce the access taxes will control the misuse of pasture and create good relationship between the locals and the Barabaig pastorals. The profits, which will be accrued from the access taxes of pasture within the village land, will be deposited in the village account and reinvested in the village development projects. The distribution of the resource is supposed to be done by a team of villagers under the control of the Village environmental management committee.

The interference of the district officers is most likely to feature in the new management but the villagers want co-management on this resource. The old tradition of the district issuing licences and the villagers getting almost nothing is outdated and never to be accepted in the new management on pasture. The villagers want the district officials to accelerate the demarcation of the village boundaries and their registration to reduce mismanagement and conflicts in time of use. The increase of animal products such as milk and meat prices has promoted the crafting of the new regulations to control the management of pasture in the study villages. The locals envy the new resource users and are vowing to divide the profits. How can they sit and watch other people reaping from their village product? However, the Ujamaa villages are located on the northern floodplain and the Barabaig are mainly in the floodplain which is officially considered to be state property after the introduction of the Ujamaa policies in the in the late 1968. The junk land is still recognised by the locals as their land despite the ban from the government to carry economic activities in such areas. The traditional customary ownership is locally applied and each member in the Ujamaa village knows where the grandfathers used to cultivate and such areas continue to be inherited along the family lineage.

The floodplain being the most valuable place for the local people is gradually attracting more people from the neighbouring villages and towns sending bad signals to the local community of losing their land to the newcomers. The new process of privatisation and liberalisation allows all people to own property wherever they wish. Despite the change of the land act of 1999, which gave the village government the authority to manage its resources including land, still, the management and decision makings organs are controlled by the district authority. The revocation of the Arusha declaration of 1967 will give the local communities power to share the resources as well as land which is today abused through collective ownership. The internal migration policies are weak and promote underdevelopment because the locals can move to another region if things in their area are not working out well. There is lack of incentives from the locals themselves and everybody is waiting for the state to provide at the same time blaming it for the problems facing the rural population.

The restriction of internal migration and will discourage unnecessary migration which have contributed to lack of labour in most of the rural areas turning the region into the home of the wild animals. The collective land ownership has discouraged the villagers from investing in their rural areas fearing the government would pass the land to a potential developer. The wealthy rural people prefer today to invest in towns like Dar es Salaam, Ikwiriri Township as properties in these places are privately owned and title deeds are issued by the ministry of

land. It is more than 30 years since the internal policy of Tanzania took place still, the majority of the villages are yet to be issued with title deeds where the village chairman will be recognised as a trustee of the registered villagers. Owing to lack of proper official boundaries, the conflicts and claims related to resource use will continue in the floodplain and other rural areas facing the same problems.

The areas especially the south with difficulties of infrastructure failed to attract the resource users until recently when the tarmac road and the newly opened bridge across Rufiji River has attracted new investors to the region posing new impacts on the natural resources.

The areas, which are still regarded as remote as Rufiji face competition and abuse by the wealthy commercial investors as the resources seem to be abundant and the locals lacking incentives to protect their heritage.

The village government lacking power to regulate and sanction will never stop the distribution of the resources including pasture. As already mentioned in this paper, the alienation of land started in the 1970s when the Ujamaa villages came to being. The state used its institutions to create more land through the concentration process, which materialised through the operation Vijijini in 1974. The land, which was not registered as village land, was converted to state adding more hectares to national parks, game reserves or protected areas. The internal ethnic reshuffle left some groups with less land than what they occupied before. Especially the pastoral communities suffered a lot. The process affected all ethnic groups regardless of their social-economic and geographical position. The emergence of the citizenship ideology, as already explained elsewhere in this paper, consolidated the internal politics of Tanzania as the traditional institutions were replaced with the state institutions (village government), which is the lowest political unit in the government.

The local appropriation rules were altered and paved way for incorporating the new agenda of the new villages with diverse ethnic groups. It became difficult to have a unified institution to govern the management and use of the CPRs as the ethno-professional groups found themselves in chaotic institutions lacking former traditional lineage leaders and council of elders who managed the resource. The new livelihood strategies without a fundamental base turned out to be burned to the villagers as many of them changed places within a period of two years. The instability in resource use made the village life boring and discouraging to the young people leaving the villages for the urban cities.

The setting of the new villages close to the main roads encouraged the movements of the local people to the towns. These villages turned into urban centres and many people moved in,

abandoning their villages including the facilities which the government had supplied to the registered villages as incentives. The accusations of witchcraft forced the people to move from one village to the other. The increase of death rates in the Ujamaa villages was considered to be the work of the witches and not an outbreak of normal diseases. The concentration of people in one area lacking the sanitation facilities can lead to the exposure to diseases and the community will have difficulties to cope with it.

The sedentary process affected the resource in the semi-arid areas and the local ecological knowledge was hardly in application as the competition among the household increased. The co-operation, which protected the resource, eroded as the demand of pasture shot against the diminishing supply. The ecological taboos were no longer respected as the household members defected for the survival of their livelihood. The defection of the entire village rendered the traditional systems powerless and the tragedy of the commons was experienced. The overuse of the pasture in one area destroyed the ground cover and most parts of the grazing zones turned to barren land without vegetation. The small animals reduced the scrubs and converted them to animal but their health deteriorated and many of them died due to lack of sufficient feeds forcing the households to give them away at throwaway prices. The affected households reduced the size of the herds or changed their economic activities to adjust to the calamities. The Barabaig today tries to make a livelihood as gatekeepers in big cities after losing their social-economic security. A conservationist considers the pastoralists as destroyers and the policy makers see them as a burden to development.

8.12 Formal legal framework

The pastoralists acquire exploitation rights to land by virtue of territorial affiliations. These people are free to exploit the pasture and water resources. The borders are founded on customary use, but were formally decided in colonial times. The boundary is not absolute, however, in times of drought and stress, people negotiate access to pasture and water across sections (Talle, 1988).

The ownership and use of land are radically different between pastoral and agricultural communities. Whilst individual incidents of ownership are manifest in agricultural community, it is communal tenure that is prevalent in a community of pastoralists. There is an inherent economic sense in this, as suggested by the following:

The economic and agricultural advantages of communal system of land tenure in a community of pastoralists or mixed farmers are immediately obvious. Very few large stretches of pastoral country are completely uniform in their characteristics, particularly when

seasonal variations are taken into account. Some parts are consistently better grazing grounds than the rest, others better than the average at certain seasons. Under a system of individual tenure, some stockowners must get sub-standard grazing ground. Under a system of communal tenure, all have equal access to the good grazing ground as well as the bad. This means, if the land is properly managed, that its stock feeding capacity will be maximised (James and Fimbo, 1973).

For Tanzanian pastoralists, communal land tenure is the central form of landholding. Individual tenure is important and complementary, largely for domiciliary settlement, grazing reserves, specific resources such as certain trees and plots for agricultural activity. Pastoralism in Tanzania has been taken to be a marginal activity, if not out-rightly counter-productive. Even legislation that refers to pastoral rights is still addressed to farmers. A classic example is the rules concerning land held under customary law proposed under the judicature and application of laws ordinance. Section 8 of the rules provides:

Where a person has no grazing land or his land is insufficient for grazing purposes, he may use land, which has not been allocated to anyone. Such use of public land shall not be a bar to another person being allocated the land if that person can put the land to be better use. On such allocation, the first person will vacate or be removed from the land.

The rules here assume individual ownership of grazing land just as a farmer owns farmland. Furthermore, land used for pastoral purposes may be allocated to any other person who may put it to better use. The lack of information on the judicial arrangements of pastoral communities renders the legislator ineffective. As matters stand, customary pastoral rights to land are in a very precarious position indeed. If land will not be under communal ownership, rural communities will do little to promote conservation of wildlife. The conservationists wishing to promote the concept of community based conservation will need to work within the current land laws to help communities acquire the strongest possible ownership rights to their traditional land.

8.13 Traditional Collective and Individual Grazing

Traditional pastoralism has been one of the most important life systems in northern Tanzania. It is best adapted to the variability of the conditions and to the inter-annual and spatial fluctuations of the resource in this region. Cattle are able to harvest and store significant amounts of proteins and fat in conditions where crops cultivation is no longer feasible. The pastoral community consider cattle as wealth as well as social status. It forms a cash deposit to be used in difficult times or on behalf of socio-cultural expenditures.

The Barabaig who are the main focus for this chapter are cattle herders and live around Mt. Hanang near Arusha northern Tanzania. They are divided into small sub-groups spread throughout this region and their identity is related to the Datooga the larger ethnic group. Although they are linked to this group, the Barabaig have their own dialects. The Barabaig are said to be proud people, with a reputation as fierce warriors. Traditionally, young men had to prove their bravery by killing an "enemy of the people" defined as any human being not a Datooga locally, or one of the dangerous wild animals such as elephant, lion or buffalo. The area occupied by the Barabaig is semi-arid region and supports the rearing of domestic animals.

The Barabaig keep goats, sheep, donkeys and a few chickens, but cattle are by far the most important domestic animal for this pastoralist people. The meat, fat, blood, milk, hide, horns, tendons and cow dung has either practical or ritual purposes. The Barabaig were pure nomadic before the villagisation programme of the 1970s, depending largely on milk products for their diet, and moving whenever the needs of their cattle dictated. Now, however, many farm a plot of maize and sometimes beans and millet. They live a very difficult life, in these semi-arid areas, where water is hard to obtain and often unclean. The Barabaig are said basically to have been by passed in modern political developments. They were not active in the colonial period and have lived in the small circle of their contacts with neighbouring peoples, mostly in a belligerent relationship.

They were pure herders, but have diversified to include agriculture in recent times because their traditional management of pasture, on which the cattle depended, is severely under stress. The increasing competition between the agriculturalist and the pastoralist in the Basuto plain resulted in a systematic loss of control by the nomadic pastoralists and an expansion of the cultivated area. This process was accelerated through the resettlement of the nomads through Ujamaa policy, demographic change, and the transformation from subsistence oriented economy into a market economy in the 1980s. The recent droughts have aggravated the existing competition. The wet grazing areas have been converted to farming and now the Barabaig have no more access to such areas.

The pasture land have become limited and at the same time, the lack of rains on the rain-fed pastures has led to a growing pressure on the limited floodplain grazing areas, forcing the pastoral people to move further south to tap the plentiful pastures found in this region.

The development of the commercial irrigation schemes has reduced the open grazing areas, which the pastoral community used to access prior to 1970s. It can be recommended that

Basuto plain is an area of rich pockets of resources attracting different groups of resource users. Among these groups, the pastoralist appears to be the losing party today.

The Barabaig have been shifting with their livestock from highland to lowland in search of pasture according to seasonal changes, in order to find adequate pastures for their stocks. As a result, there was generally a balanced adjustment between land-use patterns and the environment, which for the greater part of the northern Tanzania is semi-arid, permitting only extensive use of the pastures to main their sustainability.

The pastoral communities in these semi-arid regions of Tanzania live with the expectation of drought and have developed coping mechanisms to mitigate its effects. The impacts of drought in this region are particularly acute for poorer nomadic people with smaller livestock holdings and less developed social support networks in time of pasture and water needs. The pastoral communities view climatic change leading to drought as the major threat to their livelihood strategies and now the production activities have been affected through the introduction of the wheat farming in the former wet grazing lands. Many pastoral communities in Tanzania have been using common property rangeland and water resources to raise their livestock, which have been reduced due to development policies in the country favouring the agricultural sector at the cost of pastoralism. The pastoral communities live under highly variable climatic conditions, with their herds subject to large variations in feed and water availability.

The pastoral societies characterised by a cultural and economic orientation towards livestock tend to reinvest any surplus generated in livestock with a view to herd maximisation for cultural and economic reasons. The livestock for the pastoral societies guarantee in subsistence and income confer status and may provide insurance to the household in time of need. As a form of insurance they may be imperfect as they are subject to the impact of drought and disease. However, in the absence of alternatives particularly financial markets and institutions, they are the only forms of insurance available to many pastoral households. Livestock for the pastoral societies acts as a bank for family members and that is why the decline of the stock affects the whole household. In some cases wealth is consumed directly but more often animals are sold in order to purchase grain and other necessities of life. The store of wealth or capital in animals is also reflected in social institutions such as marriage and inheritance. Many of these group insurance mechanisms are under pressure from the new economic and political circumstances in Tanzania as well as Sub-Sahara countries. The largest transfer of livestock a male is likely to make in his lifetime is for bride wealth at

marriage. Ring (1990) argues that the bride wealth practised by the Dinka has helped to maintain kinship relations and share livestock wealth across kinship lines and between generations. However, the increased purchase of animals with the proceeds of stock trading and wage labour is reducing the basis of the joint ownership that is central to wealth sharing. The sharing of food and productive assets generally appears to increase during initial periods of stress then diminish under prolonged stress may rely on family members elsewhere who are not subject to the same stresses. Pastoral communities generally have stronger sharing institutions than agro-pastoral communities (Webb et al, 1992, Messer, 1989). Livestock are therefore a source of prestige and a means of partaking in complex networks of social obligation and reciprocity that mitigate risk (Hogg 1997). The conflicts between the pastoral and agro-pastoral communities can be related to livestock role in social obligation. The pastoral male risk their lives to steal cattle from their neighbouring communities in order to pay for bride wealth or to start again to accumulate after losing their animals through severe droughts or diseases. The pastoral societies value livestock more than land because of its social-economic values.

The areas occupied by the pastoral communities in Tanzania can hardly support crop production and usually ecologically inappropriate activity. The encroachment of irrigation farming in semi-arid lands has forced the livestock keepers to become more mobile rather than more sedentary. This is because of the lack of sufficient pasture around villages, the need to avoid damages to crops, and inadequate access to industrial or other supplementation to limited pasture. The regular seasonal movement in the past enabled the pastoralists to access different grazing areas and salt links between well-defined pastures areas (dry to wet season or low to highlands). The commercial farming such as NAFCO in the Basuto plains has nationalised all the pasturelands of the Barabaig; even the mounds are now under plough. The obstruction of the mobility has led to further acceleration and extension of overgrazing. The routes, which were used during the seasonal cattle migration, have been converted into farming grounds. The Barabaig have complained about impaired access to pasture due to development of irrigation structures near Lake Basuto.

Traditionally, the pastorals relied on common property pastures and natural water points. These areas were used properly through the continued movement avoiding pasture degradation through over grazing. The collective management of the pasture through traditional institutions gave all the community members access to selected grazing grounds. A council of elders who surveyed the area first before allowing the youths to take the animals for grazing managed the control of such areas. Livestock mobility is one of the major ways in

which Tanzanian pastoralists such as the Barabaig and Maasai have historically managed uncertainty and risk in these semi-arid regions occupied by them. Although herd diversification, stratification and drought-buffering mechanism are quite extensive, the mobility of animals provides the pastoralists with effective ways to meet many needs. The mobility can address socio-economic objectives such as access to a diverse range of markets, interaction with farming communities (for example exchanging manure for animal feed) and cultural gatherings where livestock are part of the socio-political transactions. The pastoral community prefers to move because it provides fodder to the livestock at minimal labour and lower economic cost. The logic is taking livestock to the field for grazing and water is less costly than bringing feed and water to an extensive livestock. The mobility acted as a method of risk spreading in time of forage shortage in prolonged droughts and decreasing their vulnerability to outbreaks of diseases. Since the semi-arid ecosystems productivity is spatially and temporally variable and to a large extent unpredictable, mobility enabled the opportunistic use of the resources, which were widely spread in these areas. This included moving to minimise the effects and impacts of droughts and being able to use underused pastures distant from settlement or those that are only seasonally available.

The Barabaig pastoralists moved herds and homesteads in response to the needs of fodder for livestock under climatic changes influencing variability in pasture and water. According to their long history, the Barabaig have developed an in-depth understanding of the various pastures found in the region. The pastures are classified on several criteria such as soil types, topography, vegetation and availability of ground water. Based on this knowledge, they have devised seasonal grazing rotation system in which they move amongst eight different forage regimes. This includes migration up and down the Rift valley wall and congregation near persistent vegetation and permanent water in the dry season. This can mean that some land is left free of human habitation or livestock grazing for long periods, which allows it to be preserved from overuse and conserved for times of future need. The grazing pattern is particularly critical in drought period when water and pastures are scarce. Lane (1992) argues that the availability of water acts as the most important limiting factor in pasture use.

The community members used to have general access to the common grazing land. But this access is not uncontrolled. Rights and obligations for individuals, clans and local groups protect certain areas and resources. This is managed by a common property tenure system in which access to resources is assured and controlled by customary rules and institutions. In the past this has been very effective in both maximising production and conserving resources. The institutional arrangements that defined the conditions of access to and control over led to

a stream of benefits arising from the collectively used natural resources. The indigenous system of management worked and gave protection to resources from (free-for all). The Barabaig protected the mountain rangeland from over-exploitation and the regime was reinforced by the paramount lineage chief. One of the main roles of the lineage leader was to set the opening and closing dates of particulars to prevent the “tragedy of open access). Since the Barabaig is a sub-group of the Datooga of Hanang mountain access to resources was done along the clan land. Only clan members could access the permanent wells and grazing grounds. The limited supply of well water placed an upper limit on the number of livestock that could graze on Barabaig pastures and the amount of labour available to the household restricted the number of livestock that any household could provide with water.

The Barabaig herders used to utilise the forage, water, and salt licks, which were found scattered throughout their territory before villagisation and development projects took place in the post-independence period. During the wet season the Barabaig moved with their livestock to the depressions on the plains that are endowed with fertile soil and sustain a rich variety of grasses. This region can support the animals in the rainy season and the Barabaig are forced to bring down their livestock in the dry season to the Basuto plains near their villages. However, there are no permanent water points in these areas. When the rains stopped and the surface water dried up, the Barabaig moved along the margins of Lake Balangda Lelu where they were able to draw water from the permanent wells along the lake. As the pastures got depleted, they moved further south of the Basuto plains once the pasture stock closer to the villages were recognised to be insufficient to last the whole dry season and along the mountain slopes to find new pastures. The Barabaig realised that maintenance of pastures during the dry season is critical and thus during the wet season they moved to other distant areas, so as to allow time for pastures near permanent water sources to recover, which were to be used in the dry season. This rotation pattern has evolved over the years to make the best use of spatial variability in pasture and water sources in this semi-arid region supporting the socio-economic needs of the Barabaig. The herd diversification according to the ecological adoption was the daily routine of the Barabaig while using resources in the Basuto floodplain, which is situated in a semi-arid region of Hanang district Northern Tanzania.

The land carrying capacity was advocated to avoid soil erosion and overuse of the pastures, which was traditionally condemned. Small animals like goats and sheep were separated from the cattle. The scrubs, which were considered useless, were converted to proteins by the small animals into proteins, which are important for the building of the human body. The current movement of the Barabaig from one region to the other in search of the water and pastures has

contributed to the decline of small animals affecting the income of the Barabaig. The small animals are mainly used for payment of bride price and for traditional ceremonies and as well as meat production for subsistence.

The structure of property rights evolved accordingly and consisted of a bundle of rights on pasture, trees and water resources. Open rangeland was regarded as the property of the community and its use was regulated by a set of customary rules. The Barabaig, however, also recognised private property in the form of a homestead and its surrounds.

Lane (1992) gives details of a hierarchy of rural institutions that control access to and adjudicate in matters of dispute. Without enforcement of these customary rules it is possible, for instance, that some pastoralists may like to settle along lake margins where the wells provided permanent sources of water. However, the Barabaig recognised that permanent settlement there would result in depletion of the pastures near the water source which is critical for the community in the dry season. Water routes were also closely protected and homesteads were set up on different area.

Barabaig pastoralists used rotational grazing as a strategy for effective utilisation of rangelands. Rotational grazing is undertaken for two reasons. The first is to avoid the problem of overgrazing and allow regeneration of pasture. The second is the need to respond to the climatic variations within and between months of the year. In this study it was mentioned that water is the major attribute that regulates rotational grazing among the Barabaig pastoralist.

The practice of rotational grazing implies that some pieces of land were left unoccupied in certain parts of the year or sometimes even for longer periods to allow it to recover. However, in many parts of the developing world, when pressure on land increased, it was perceived that such fallow land was unoccupied and thus available to be redistributed for permanent settlement.

8.14 Nature of Changes on pasture use

The pastoralist societies face greater threats to their way of life now, than at any other time in the recent past. With the creation of game parks, private ranches, and commercial wheat estates, Barabaig herders, in particular, are fenced off and evicted from lands that were traditionally and legally theirs. Increasingly, Barabaig and other pastoral group are creating their own NGOs (non-governmental organizations) and going to court against national governments to defend their land rights.

Changes in the economy in Tanzania since the introduction of the structural adjustment programme, have led to ecological changes, which have affected the cattle economy of the pastoralist communities and also the use of pasture in most semi-arid regions in the country. In this part I outline these changes in regard to changes in traditional institutions governing access to pasture in areas previously considered to be cattle grazing grounds for the Barabaig pastoralist. In this chapter we will show that the traditional institutions have not been altered to improve the livelihood strategies of the pastoralists but have been transformed and weakened, giving some wealthy and powerful individuals the right to privatise this CPR under the privatisation policies. The major changes in the ecological environment is due to droughts, which have been taking place in every three years since the 1990s as well as changes in the regulation of the floods through the new commercial activities in the Basuto plains, which formerly supported cattle economy in this area. Local residents argue that the control of water for commercial irrigation has led to less flooding in the wet season affecting the growth of grass, which the pastoralist animals depended on during the dry season. The new commercial activities have managed to control use of the water denying the pastoralists rights to reach such important watering points and pasture along the walk paths to the river or lake.

A similar process of commercial farms and Game Park expansion has occurred in post-socialist Tanzania. In the Maasai area of Simanjiro, the government has alienated 50,000 hectares of land for 80 large-scale farms producing seed bean for export to Holland. These farms are built near permanent water sources and prevent access for Maasai cattle. Furthermore, large game areas including Ngorongoro Conservation Area and the Mkomazi Game Reserve, which initially included pastoral and cultivating populations, are clearing the game parks of people, supposedly to protect wildlife populations.

It is said that much of the water today is stored in the artificial dams for irrigation and the pastoralists' animals are kept away from such areas as the administrators complain of dyke's destruction by the animals. This behaviour has forced the pastoralists to move to distant places to water their animals and in many occasions conflicts have been taking place once the pastoralists made short cuts through the farmer's land on their way to the watering points. This practice has affected the relationship between the farmers and the pastoralists and now they hate each other. The farmers have blocked or narrowed most of the walking footpaths and this has affected and kept away the pastoralists from the grazing areas in the plains, which the community's cattle used to depend on during the dry season. The reduction of the pasture and water points are the driving factors, which have forced the pastoralists to look for more pastures and water points outside their traditional territories.

The appropriation of Barabaig lands is in violation of communal property rights of the pastoralists, rights, which are legally protected in Tanzania and are given some protection in Kenya. However, privatisation of land is touted by the World Bank and major donors from United States, Japan, and the European Community as more efficient in generating cash crops and beef than communal grazing or cultivation.

Economically, these changes have affected the household's income as the number of cattle has reduced drastically due to shortage of pasture, water and outbreak of diseases. The locals said the land available in their ancestral grazing grounds cannot support the number of cattle each household owns and that has opened competition in pasture use and many of the animals have been affected due to underfeeding. The pastoralists said that more of their cattle died as the government opened their traditional grazing areas to commercial agriculturist farmers. They estimate that between 60 to 80% of their cattle died during this period and the majority of the households could not rebuild their herds any more, as the key informants claimed, but the same was supported from the information collected from the focus groups discussion. The pastoral communities had double tragedy in their economy. The loss of pasture, which was approximated to be nearly half of the original grazing ground, was a big blow to the livelihood of this pastoral community. This loss contributed to the decline of the cattle per a household and that is seen to have compelled most households to diversify their income sources shifting from cattle dependence to job markets. According to the informants and other crucial information from the field study, the loss of cattle for the Barabaig was a social, economic and political tragedy. From this context it would appear that there is still a problem of pasture; however, the out-migration has lessened the burden, still the quality of pasture, which increased the productivity of the animals and improved its health, remains to be a dream for the pastoralists. The informants said that the traditional institutions were selective and maintained the culture of grazing but which is not the case today. The pastoral community used to select the types of grass which were locally recommended for the milk increase and the fattening of the animals.

The changes in pasture management are related to the internal political regimes and the recent changes of the state policies to accommodate the external investors. In the specific case of Tanzania, around the 1960s with the opening up of food markets, the Tanzanian government in collaboration with the Canadian government, agreed to develop the Basuto plain in northern Tanzania for wheat cultivation. Under the scheme, the most fertile land on the plains (used by Barabaig in wet season grazing) was appropriated under the pretext that it was

unoccupied or underutilized. The Barabaig were excluded from the use of this land, however, the government promised at the initial stage to include them as full beneficiaries.

In 1968, the Barabaig saw 70,000 hectares (later expanded to 100,000 hectares) of their land taken over by the National Agriculture and Food Corporation NAFCO) to grow commercial wheat on seven state farms. This project was funded in large part by the Canadian International Development Agency (CIDA), which provided US$60 million in assistance mainly to pay for Canadian expertise and mechanised equipment. The Barabaig herders were evicted from these lands and forbidden from crossing farm boundaries to reach grazing and water resources. Trespassers were punished with beatings and fines, despite protests by Barabaig elders that Tanzanian law recognises customary rights to land. Elders also complained that they were denied access to the graves of their ancestors located on the farm property (Lane 1996).

The Barabaig did challenge the legality of their land alienation in Tanzanian courts in 1981, claiming that neither local Barabaig nor the village council were consulted when NAFCO acquired land for a Malbadaw wheat farm (one of seven NAFCO farms). They wanted restoration of grave sites, action to arrest soil erosion, restoration of traditional rights of way across the farms, and damages of Tsh. 100 million (US$1 million in 1986, US$125,000 in 1994) (Lane 1994).

NAFCO did not deny their acquisition of land but claimed it had authority to acquire it for the public interest. The Tanzanian High Court ruled in favour of the Barabaig by declaring that their customary claims were valid under the Tanzanian constitution and that proper legal procedures for acquiring land were not followed by NAFCO. However, a technical flaw limited the victory. The court ruled that all 788 plaintiffs were not properly notified and awarded only the six plaintiffs who appeared in court. The six plaintiffs were compensated for 300 ha of land (but not the actual land) totalling US$1200.

This judgement, however, was overturned on appeal in 1986 because not all the plaintiffs were considered inactive within the definition of the 1923 Land Ordinance, because several were Somali descendants. This defeat was a major setback for the Barabaig and led to an increase in NAFCO aggression toward the Barabaig and expansion of the wheat scheme in the 1980s. Furthermore, the Tanzanian government set in motion a series of laws attempting to extinguish customary rights in land and prohibit the payment of compensation for such extinction (Lane 1994). Frustrated by the slow pace of the courts, the Barabaig began an international campaign in the 1980s, which included the publication of an open letter in

Canadian newspapers demanding their indigenous pastoral customary rights to the land they occupy (Lane 1996).

The displacement of the Barabaig pastoralists from their dry grazing lands in the northern part of Tanzania to the more southerly areas is related to their inferior bargaining power. Lane (1991) argues that the main causes of the displacement of Barabaig pastoralists from the grazing grounds is related to political powers but has nothing to do with livelihood improvement of the Barabaig people. Due to greater political powers, the agriculturists and conservationists have been able to displace the pastoralists from their rangeland to make way for large and small-scale farms and national parks reserves. In these areas, the Tanzanian government has imposed a new tenure regime that is consistent with its policies of villagisation and wildlife conservation.

The new policies have limited the access to pasture, which the Barabaig used to graze their livestock in the dry season as well as wet season. Losing the dry season grazing land has now forced the Barabaig to look for alternatives in other regions. The traditional rules and institutions designed to control the use of pasture have been transformed and now the Barabaig cannot effectively adapt to the new constraints that have been imposed on them through the new state institutions. According to the Barabaig, this has resulted in overgrazing on the limited land available to them. It has become difficult for the herders to track the deteriorating ecosystem by constant monitoring and adjusting the behaviour of their animals accordingly (Scoones 1994; Niamir 1997). The tracking system used to help the herds to analyse the ecological process to monitor the changes in pasture quality and quantity to prevent over grazing. The Barabaig elders used to move from one region to the other assessing the availability of pasture and water. The Moran (young men) that was taking care of the animals was to follow the instructions of the elders while in the field. If flexible access to different habitats and resources is ensured, higher populations of herbivores can be maintained in any given area (Scoones 1993). The implementation of the Ujamaa policies disturbed many societies in Tanzania and most of them were forced to relocate from their traditional lands. The new system denied the locals their freedom of accessing the resources freely according to the local appropriation rules. The creating of the livestock villages in the time of the Nyerere government reduced the mobility of the pastoral communities and their former grazing areas were converted to commercial ranges or divided for small-scale farming. The sedentary system, which the new policies of rural development introduced in Tanzania, affected the economy of the pastoral community. The breakdown of the traditional institutions, which used to manage pasture in this semi-arid region of Hanang district, has

contributed to open access constellation. Lack of proper management institutions led to over grazing and many parts of this region experienced soil erosion as the ground cover was destroyed by the animals as there mobility was limited due to land alienation.

This new arrangement of resource use and distribution disturbed the grazing pattern of the Barabaig as the less fertile pieces of land along permanent water sources, which were formerly used only in dry seasons, started being used more intensively. Despite grassland ecosystems in this region being capable of withstanding some degree of stress, the continued intensive use contributed to pasture depletion in this region. These lands had earlier served as insurance for the pastorals during dry season. As the pressure on land increased, the system became more vulnerable to collapse during years of drought.

This is also a case where institutional response in the form of a new set of property rights or markets did not emerge to correct for the deteriorating situation. As argued earlier, the opening of the primitive community to an increased flow of strangers, together with a change in traditional pattern of grazing led to undermining of traditional authority structures. Thus old institutions crumbled while new ones failed to emerge. The institutional vacuum led to further deterioration of the resource base and greater vulnerability. For the Barabaig to come out of this trap requires a massive effort to be undertaken collectively to restore the pasture. However, given the institutional vacuum and poverty, this is difficult to overcome by the Barabaig who have been socially, economically and politically restructured. With the introduction of wheat in the Basuto plains, the Barabaig collective grazing institutions were dismantled as the area was opened to foreign economic activities, which led to insecure property rights contributing to resource degradation and poverty. The traditional system of resource management was replaced with the opening of new markets and increase in population contributing to more intensive in resource management.

The wheat growing farms and other cultivation have effectively eliminated the grazing rotation one of the eight forage regimes the Barabaig call muhejega. The muhejega constitute the most important element in the pasture regime of the grazing rotation. The exclusion from these areas has denied the Barabaig access to certain important and highly productive livestock pasture species collectively called nyega nyatka. One type of grass called megojiga (milk grass), which is particularly favoured by the Barabaig, has been completely eradicated from the Basuto plains, the former grazing land for the Barabaig. The mobility of the Barabaig in the region is no longer permitted and now they must search for pasture elsewhere. By preventing access to these fertile areas even after harvesting of wheat, the whole rotational

grazing system has been disrupted, effectively reducing the pastoral productive capacity of the whole district beyond the impacts of the wheat farms. This loss has resulted in a drastic reduction of livestock numbers and a decline in production, which the Barabaig say, has caused them great suffering and their livelihood, is in danger.

8.15 Alternative Coping Strategies of Barabaig

Source: Meroka, Patrick 2003

The traditional production of the Barabaig has changed in the last 15 years when the government developed policies for rural development through agricultural production. Although the government enjoys the animal products, the lives of the herds and their animals were not included in the new policy. The institutional change did not spare the Barabaig ways of production. Their nomadic life changed when the Ujamaa policy was implemented through the introduction of villagisation programme, which was a national strategy for rural development. The villagisation programme led to permanent settlement, forcing this community and other pastoralists to change their traditional management of pasture use. The free movement of the cattle was forbidden with the new regulations and the traditional boundaries were opened and demarcated again according to the new political boundaries structure, forcing the Barabaig to share their ancestral land with the newcomers considered by the state as potential developers. The introduction of livestock villages in this semi- arid area of Hanang district reduced the pasture acreage and the change of climate conditions affected the income of the Barabaig extensively. The change of institutional (rules) on the

management of the pastures led to overuse of the pasture, contributing to high rate of animal deaths and change in relative prices. The change of the old policies leading to the emergence of new institutions altered the traditional management of the communal pastures. The Barabaig found them in permanent settlements, which interfered with their mobility, and as consequence, the intensification of the available resource use leading to the degradation of the environment as well as contributing to the decline and quality of pasture.

The pre-colonial institutions governing access to pasture in these important parts of the Basuto floodplain were regulated locally. The Barabaig used the area according to specific rules, which developed in pre-colonial times and shaped the way that transhumance was done in the area. The way the Barabaig moved between the main settlements and the floodplain was regulated and instituted before the commercial rangers and farmers came to the area in the 1980s.

The traditional rights, which the locals used to enjoy, were drastically reduced and the mobility of the animals was reduced forcing the Barabaig to change their traditional management of the resources. The fields, which were left open for the Barabaig for grazing, were again internally encroached upon by a sub-section of the Barabaig who diversified their livelihood after losing their animals. These days the crop production is the dominant form of land use, while in a relative sense grazing is becoming more peripheral. The improvement of technology and opening of this remote area through the construction of infrastructure has changed the traditional production in the area.

The demand for grazing resources increased in the 1980s as improvements in transportation infrastructure resulted in increases in the local prices of cattle. The encroachment of the pastures by the new farmers in the area reduced the grazing land available within the territory of the Barabaig. The elders were not able to enforce the rules that maintained the local commons. While the Barabaig organised to protect their livelihood, some of the sub-groups accepted the new strategies in production and converted some grazing into wheat growing, which the co-operation promised to buy from them. It was a problem to those who stood by their animals to continue with their means of production as commercial farmers already closed many of the traditional corridors for the animals. The concentration of the animals in limited space led to outbreak of diseases and many households' economy was wiped out.

The former pastoral ecosystem was relatively healthy despite the severe droughts in the area. The demands of the animals in dry grazing were supported through continued mobility within the territory of the Barabaig. The trading of cattle with the neighbouring ethnic groups for

maize, which later influenced some of the Barabaig to start farming, caused internal conflicts within the community members. The demand of agricultural land reduced the size of acreage of the ranges forcing the semi- nomadic pastoralists to overuse the limited grazing land.

The breakdown of the Pre-Ujamaa institutions and the emergence of the new institutions with state interest in the management of the natural resources with weak monitoring and sanctioning machinery contributed to over extraction and de facto open access. The influx of new land users in Hanang district in the northern part of Tanzania has disrupted the traditional social structure of the Barabaig forcing them to change their attitudes towards cattle rearing and adapting the new economic strategies. The out-migration of the Barabaig in search of pasture has become necessary to meet the demands of their animals, which have been affected by the lack of sufficient pasture. The movement of the Barabaig from the Basuto plains to Rufiji floodplain in search of the pastures shows how the newcomers having support from the state have alienated their traditional grazing lands. The livestock being their capital and social identity, the Barabaig have taken all the risks to move to distant places to rescue their animals and to continue with their economy, which has been maintained for decades.

The development of the new strategies to access pasture outside Hanang district is backed by the market economy.

The Barabaig have been using different strategies in the new areas to win the confidence of the local people and to get support from the local administration as well. The arrival of the Barabaig in Rufiji district in 2002 after the prolonged drought pushed them down to Rufiji district, which was considered a rescue area because of the availability of the pastures. The Barabaig used the common ideology of citizenship to access the region. However, strong opposition came from the local farmers who show the presence of the Barabaig as an additional problem besides wildlife for their farming activities. The mixed reactions at the start were an advantage for the Barabaig to settle down because a group of local people were friendly to them as animal products flowed to individual households to allow them the use the farm residues as well as protection against those who were against them. The exchange of animal products with access rights made the Barabaig to development relationship with the local people. The local people especially men profited from the capital after the selling of an animal. The Barabaig like socialising and the Rufiji people indirectly received part of the capital through local brews. It was easy for the Barabaig to make friends locally through the provision of food and drinks.

8.16 Role of state actors and rich cattle owners

As the pastorals are moving to the village territories in Rufiji district in search of the CPR (pasture) which has been monopolised by a few individuals in the area now, the villagers see this resource can be converted into money. It is not only the villagers who see the coming of the Barabaig as a social-economic problem to the rural economy but the few livestock owners have started experiencing challenges in market monopoly as the animal's products prices are now coming down. The livestock owners are not the Rufiji people but the government officers who are working in this region but coming from other districts. These administrators are afraid of being marginalised in the market control and that is why some of them are campaigning against the Barabaig through the government machineries or using some farmers groups to claim of crop destruction and demand high compensation from the cattle owners. Although the Barabaig presence is not good news to the villagers, the supply of cheap animal products such as meat and milk contributes to the villager's tolerance. In the recent days a section of the villagers are planning to start rearing livestock because the conditions are conducive for animals in the region. The presence of tall grass and water in the floodplain will support animal farming, which some ethno professional groups like the Ndengereko (agriculturist) are against because animal rearing is not part of their social-economic culture.

The increase of the animal products seems to be an encouraging factor to the Rufiji people to diversify their livelihood strategies. The change of the main livelihoods and the economic constraints the Rufiji people are facing today no opportunity is left untested among the young people. The diversification of the livelihood strategies will contribute directly or indirectly to the conservation of the CPRs in the region which are facing overexploitation problems. The household will not depend on the current livelihoods, which seem to be under pressure through the increase on demand, change in relative prices, infrastructure and technology.

The coming of the Barabaig to the area has promoted the importance and value of pasture which has been recognised as ground cover for decades but now this CPR can be converted into money. This resource is now under debate about how it can be managed to benefit all actors involved. The community members are working on modalities of how the resource can be managed through co-management to avoid frustrations from the district council. The local people want this resource to be protected by traditional rules but not state laws which give outsiders power to access and use the resource without consulting the village chairman or the villager where this resource is located. It is difficult for the village government to put

boundaries for the pastorals because the village land is yet to be demarcated and registered according to land act of 1999.

The current law permits the Tanzanians to access all the resources wherever they wish and that is the major barrier for the village government to exclude the newly pastorals in the Rufiji floodplain from Pasture use. The ideological justification affects all the CPRs uses in the areas as well as other parts of Tanzania where the CPRs are still held as common property mainly in those areas under the Ujamaa villages. The ideology of citizenship is widely applied especially by seasonal immigrants to access the CPRs. It is difficult to exclude the resource users as the local appropriation rules are not enforced because the newly created state institutions rendered the traditional institutions powerless. The change of institutions in the colonial and post-colonial government dismantled the local institutions, which supported the management of this resource. Although the Rufiji people are not considered to be livestock keepers, small animals were tamed by the local people before the villagisation process took place in 1970s.

The floodplain settlements supported the conditions of small animals, which became difficult in the new settlement in the higher places north of Rufiji River. The villagers lost this livelihood due to climatic change and attacks from the wild animals. The soil conditions in the North of Rufiji River are sandy which support vegetation in the rain season and are extremely dry the rest of the year. The climatic and policy changes have affected the pastoral communities in particular contributing to their out migration from their ancestral land. The Barabaig of the Basset floodplain have been pushed south because the area formerly occupied by them has been given to a foreign developer. The privatisation and liberalisation process has marginalised the local communities contributing to increase in poverty and displacement. The new pastorals in Rufiji floodplain argue that the state permits all people to move within its national boundaries and use all resources in time of need. This ideology which was intended to develop a unified Tanzania was misplaced and gave some ethnic groups more power to acquire more property under the notion of development and being a Tanzanian. The newcomers profit from the open access nature because they can make reference to the state, while at the same time they are not afraid of the state, because of its absence in time of need. It is quite difficult for the village government to challenge these newcomers because the local law implementers cannot go against the national law and that is why the new resource users, the pastoralists, need to be integrated in the management of Pasture. There is need to incorporate the pastorals' needs in the agricultural policies to safeguard the interests of both parties using the same resource.

The villagers of Mbunju/Mvuleni are trying to reorganise locally because of economic interests and individual gains. The villagers have brushed aside their long-term differences and are now planning to set up a committee to deal with the pastorals' issues. This committee will officiate to survey the most appropriate areas for grazing to avoid conflicts between the new pastorals and the Rufiji farmers. The areas to be set aside will remain the village property and all the villagers are likely to benefit from it through the revenues to be collected. The incentives will work out if clear local appropriation rules are set and implemented by the pasture management committee. The separation of power is necessary to have an independent institution to reduce the channels of communication and management cost. Although the state continued managing the resources in this village, the village government is pushing to have the village registered to be independent in managing its resource. The villagers can craft appropriation rules but the outsiders will never respect them because the old laws are still working. Through the policies of privatisation and liberalisation, the state needs to surrender the entire management and the villagers to deal with the interested resource users to reduce the transaction and monitoring cost. The aims of privatisation and liberalisation were to reduce the state's expenditure and concentrate on profitable projects to improve the living standard of the rural population. The change of state policies without implementation is the waste of resources and is linked to putting new wine in the old bottles

8.17 Community collective management system

This chapter examines what can be seen regarding the institutional change and how these have influenced the current situation. It is argued that droughts and disease outbreaks have pushed the livelihoods of many households to the periphery, forcing them to craft new institutions to assist them tackle the problems facing pasture use today and in the future. The local residents proposing to open new projects in the floodplain for grazing purpose, is a turning point economically as this can solve the problems facing agricultural production. As this area is full of water and there is enough land for grazing, there is a possibility to attract new resource users who would pay a fee for access. The local residents could invest the collection to purchase food from the market.

The opposition leaders are trying to use this opportunity to educate the residents about the importance of having such a project under collective management. Although this project can have economic values to the community, it can only succeed if it is supported politically. The challenges facing the projects are higher than the immediate benefits it can bring to the community. The organisers are trying to manipulate the local leaders to support, promising

them the collective management will be controlled by traditional institution to govern access to the pasture and pushes a kind of community privatisation to exclude the non-residents to benefit from the revenues to be collected. There is a challenge how this traditional institution will survive while the government policies are opening the area to the rest of the world through privatisation and liberalisation process. As traditional institutions are going to engage themselves more in a market economy, the cultural values of such institutions are expected to change as the external pressure will overcome the internal organisation forcing the management groups to brush aside the original concept and start taking favours. This supports one of the hypotheses, which argues that traditional rules remain only in an earlier stage or are transformed if they give access to money.

The local residents say that money has now become more important for access to pasture than was the case in pre-colonial times. If these people want to use pasture here, the only way to access it is through payment. The old system of resource use must be altered to protect the interest of other groups. The residents are afraid the newcomers are going to corrupt the system and obtain land rights and many of us will be kicked as these groups coming to our region, claimed one of the elderly villagers. We are told, some of the land has been sold but none of our leaders are informed of the transactions. There are only some people from the district offices who might have some information but now as residents of this village, we must unite and act collectively, otherwise the door has been opened and all of us will be shown the way out.

The resident's vows not to trust the government officially as they have interest in the resource and through their smart tactics nothing will mature and the newcomers are likely to dominate our resources. The past has left history for this village and that is why the collective action will be of much benefit than to face the problem alone.

The Rufiji communities in the Rufiji floodplain have economically profited from the incoming of the Barabaig but on the other hand, the Barabaig seem to be a problem to the agriculturist. The free moving of the cattle in search of pasture and water in the floodplain has caused conflicts between the Rufiji agriculturists and the Barabaig. The Rufiji people are against the Barabaig because of their carelessness; however, it is part of their culture to set free their animals. The Rufiji people have no idea concerning the Barabaig lifestyle and their means of production. The movement of animals into sacred forests, burial grounds and overgrazing around the water ponds has angered the Rufiji people who fetch water from such

areas. The local residents complain of poor quality of water since the arrival of the Barabaig animals as drinking water has been contaminated with urine and animal excreta.

The social relationship between the new resource user and the local residents is still to develop for better management of the resource. The Rufiji people who are traditionally agriculturalists feel their political, economical and social rights are threatened by the presence of the Barabaig in their ancestral land. The few natives or governments official livestock owners in the District are not comfortable with the presence of the Barabaig in the region. The presence of the Barabaig animals in this region has increased the animal products output contributing to competition in prices for these products at the regional market. The community now has plenty of milk and beef meat is available every week, which was not the case before. The monopoly of the market by the few livestock owners are now using their powers to influence the local government administration to drive the Barabaig out of Rufiji floodplain and especially closer to urban centres where the animal products are sold. The conflicts of interest have made the local community reorganise and defend the pastures within the village boundaries. It is somehow difficult for these villages to achieve their goals because the boundaries application to exclude the Barabaig from access might not work as the final survey is yet to be done. Despite this problem, the villagers feel entitled to manage the resource.

The local people argue that the animals disturb their farms and now a fee must be paid to access such areas. The collective management of the pasture resource in the floodplain is difficult, as many of the villagers are somehow irresponsible, while the others are pushing for collective management. The local villagers to support their initiative of controlling the grazing lands within the village land have approached the village government to demarcate part of the village land to be conserved for commercial grazing. The initial group had various options for the Barabaig to choose. The payment can be made by giving some animals to the village government and some part of the pastures were to be carved for them for some time and once the agreed duration is over, then additional cows can be paid for. The second option was monthly payment but some members opposed this system because of the past experienced of funds misappropriation.

The lending of animals by the Barabaig will motivate many households to adopt the new economic strategies and stop being pure agriculturist, which is today unreliable as the market prices keep changing causing insecurity in the sector. The disagreement on how the resource is going to be managed for the benefit of the residents pose a problem of co-ordination and

collective action in this respect. In case the new management will be formed, the local people will benefit as their demands, wishes and knowledge will be incorporated in the management and the top-down approach will end.

The increase of demand of cattle products at the urban markets contributes to change in relative prices, whereby the increase of prices of goods has a direct influence on the animal products. The liberalisation and privatisation in Tanzania affected the livelihood of the Barabaig. The commercialisation of milk has changed the traditional attitudes of nomadic production. The milk, which the women controlled, is today a commercial commodity for the pastoral communities. The demand for milk and meat in the urban markets has influenced the pastoralists to increase the number of their herds in a limited space. The climatic changes and the external forces have affected the production of livestock in the semi-arid areas in Tanzania. The decline of pasture and water in the dry grazing regions have forced the nomadic pastoralists to abandon these range lands, which have been converted into irrigation schemes and now the traditional pastoralists have to find alternatives elsewhere outside their traditional territories for grazing.

8.18 Reaction of villagers in Mbunju

The first reaction of the Mbunju people was mixed, as already stated, but the villagers' attitudes somehow changed as the new resource users became closer to the villagers and explained their reaction of coming. Some villagers were afraid the pastoral community would stay permanently in the area and related the issue to Segani irrigation scheme, which was meant to improve the production for the Mbunju people but today is controlled by the Ikwiriri people.

The issue turned to be politics at the village level and it turned to be the talk of the day in various groups, according to the political party or age sets. The youths show it as a source of income while the elderly people were worried of their farming areas. The villagers were not aware how to deal with the Barabaig because of their social-economic backgrounds. The Mbunju culture is far from the Barabaig but having the same interest on land. The Barabaig were only interested in pasture but not land but the Mbunju people argued the animals are private property and for this reaction, the profits are controlled by individuals and that is why this pastoral community has to pay a fee for accessing the abundant pastures in the floodplain.

8.19 Conclusion

The Rufiji people are traditional agriculturists but the new pastoralists in the region have changed their traditional methods of production. The Rufiji people are now developing pasture institutions to control the access to the resource. The pastures in Rufiji are acquiring economic values as the locals can exchange them for money. The new resource users can only access the grazing land on the village land through payments. The new initiatives will open new avenues for the Rufiji people to earn an income and stop burning the grass as they used to do. The economic constraints facing the people locally are today the driving forces to unite for common interest. It will be profitable for the villagers if they succeed in controlling and managing the resource by themselves without involving the district council. It will be of interest in the future to see how these new institutions are going to develop and what problems they will face. At the beginning there is a lot of speculation that the resource will be managed perfectly but the problems might arise on profit distribution among the villagers and those controlling this pasture institution.

Livestock keeping plays a central role in the Barabaig community, where division of labour and decision-making are organised around a strict institutional set up.

Women in this community play an active role in livestock keeping since they are responsible not only for milking and treating sick animals but also for selecting cows for milk production and breeding. Although this role is highly appreciated in this pastoral community, the study has shown that women are usually accorded the lowest status in the decision-making system due to the patriarchal structure of the community. They often lack a forum where their views can be heard and their knowledge broadened through the exchange of experience with men.

The Barabaig community have a sound knowledge and understanding of their environment, and are able to put appropriate managerial skills and adaptive strategies in animal husbandry and forage resource management. Despite their migration and adaptation to new environments, traditional management techniques have undergone little changes in comparison with the place of their origin and the community has been able to conserve their indigenous knowledge even when moving to different climatic settings. From the results of the study, traditional systems such as observation of stars, birds, month counting can be used in predicting weather.

These systems can also be used in range assessment and improvement, such as rotational grazing, burning pastures to regenerate growth, reduction of parasite infestation and killing of undesirable plant species, traditional animal therapy (ethno veterinary) and mobility to

disperse grazing pressure. Through these indigenous techniques, the pastoralists have been able to survive in unpredictable environments, where conceptualisation of ecological proceedings takes different forms, ranging from observable attributes to superstitious beliefs. It is important to recognise the existence and contribution of local knowledge to the livelihoods of pastoralists and the entire livestock production in the rangelands. Recognition of local practices not only gives confidence to the pastoralists for the fact that their knowledge and skills are valued, but also leads to preservation and continued use of their local knowledge.

Barabaig traditional knowledge can help broaden the scope of understanding of conventional range management and animal husbandry science. The integration of local knowledge systems and modern range science would allow for better results. Bush clearing in order to allow regeneration of pastures and tsetse control is a vivid example as it is recognised by both local and scientific knowledge but needs modification to yield better results. During the meetings with the respondents, it became clear that combining local and scientific knowledge would be likely to benefit the pastoralists. The most important aspects of conventional range management, which could be combined, with the local practices of the Barabaig include:

Bush clearing to allow regeneration of pastures and tsetse flies control although this should be done cautiously due to the detrimental effect of fire on vegetation. Reseed the rangelands with leguminous plants and multi-purpose trees to increase the nutritional status of the grazed forage. We can conclude that pastoral commons had in the last 20 years been more and more dismantled by the economic interest in cattle and commercial irrigation by powerful resource users. This group of people are trying to get more control over the pasture area through the opening of the area for other economic activities than traditional animal rearing. This will be seen in close connection with the new land act and with the debate of how to use the floodplain and other grazing areas in the future.

9 Conclusion and recommendation

The conclusion made here is based on the final work of the research, which took place in Rufiji floodplain. The information in this final report is that the CPRs in the floodplain were fairly managed through traditional institutions in the Pre-Ujamaa time. Although these institutions lacked formal by-laws at the local level; the management of the natural resources was done in a transparent way, forcing the villagers to co-operate. The co operation of the villagers in the old institutions especially in monitoring, sanctioning and regulation

maintained the quality and quantity of the resources in the floodplain and gave the villagers a chance to enjoy the benefits from the resources.

The traditional CPRs institutions, which were responsible for the management of fisheries, wildlife and pasture incorporated Ostroms' design principles, which were used for this research as a tool. The sound management of the natural resources through the informal traditional by-laws made the transaction cost minimal because every villager participated in the management either directly or indirectly. It can be argued that the traditional institutions were cable of managing the CPRs because the by-laws were crafted according to the demands of the society. The locals did the implementation of the by-laws themselves and the sanctioning and regulation was left for the (Mpindo) and his council of elders. In addition to the customary by-laws, the Rufiji people applied traditional religion to maintain the sustainability of the resources in this region. The traditional religion reinforced the implementation of the customary laws, which every villager was obliged to respect. Although the Rufiji people are recognised as Moslems, the animistic beliefs are still applicable, as they are believed to have the power to conserve the natural resources. The customary boundaries were flexible and neighbouring clans were allowed to share resources in a reciprocal system. This means reciprocity was done to close kin who were believed to have been well informed on the customs of the other lineage, which accepted to share resource. It was important to allow close kin people as it was believed the distant people would violate the local norms governing the resource and in the process annoying the controller and owner of the resource. The locals had to be very careful not to show disrespect to the spirits of production. The host village trusted their kin's men and it was difficult for a close kin to go against the lineage norms of natural resource use. The fixed boundaries especially in a country like Tanzania will never improve the quality of the resources but ways of incorporating all the stakeholders in the management will be the starting point of sound management. The old traditions of kinship are still valid and that makes the management of the natural resources in the floodplain difficult. The internal migration of villagers within the floodplain and incoming of relatives from the highlands has made the monitoring system complicated for the village government today.

The communities demand transparency in matters troubling them such as illegal lumbering, logging, hunting and boundary disputes. The communities in the floodplain fear losing these resources in the future to well connect individuals in the central government. The village government council fears the powers of these politically blessed individuals will target them

in order to silence them from asking questions on matters related to mismanagement of the common property resources.

Also the ongoing conflicts concerning the access and use of the resources have caused panic and fear in the village. The communal property resource shall be protected for the benefit of village members and demand that outsiders are to be excluded from exploiting these resources. The exclusion of outsiders from the exploitation of the natural resources in the floodplain appears to be a core problem facing the Rufiji floodplain. The heterogeneity of the local inhabitants with their diversity of livelihood and the incoming of new users with bargaining powers has contributed to the diminishing of the resource. It is believed that the outsiders have violated the traditions of the communities and some of the crucial resources are declining tremendously in the area. The villagers express their fear that all the livelihoods will disappear one day and the whole village will be left with nothing. The outsiders not only cause the problems facing the CPRs in the floodplain but the locals contribute to the degradation and depletion of the natural resources. Today the competition among the resource users of various categories is high as these groups continue following their interests. The core problem in this case is communication among the resource users to find a better way that these resources can be managed. The opening of this area, which was considered remote through the improvement of infrastructure, has caused tensions at the village level. The villagers are in panic and that is why the majority have decided to work against the stipulated policies to conserve the resource.

The state has failed to control illegal hunting and fishing because its institutions are poorly organised and lack human and material capital to implement the policies governing the CPRs in the floodplain and other parts of Tanzania. The personal interest of the state officials on the resources has contributed to overuse because it is impossible to check their wrong behaviour while being active resource users. The issue of corruption among these officials has caused the locals not to trust them anymore. The local communities have no chance to organise themselves to defend their resources against the outsiders because the state policies defend the potential developers but not the ordinary citizen. This means the state is interested in making profits from the resources but the welfare of the local people is not an issue. This can be supported where the state protects the wild animals, which cause death and crop destruction but no compensation is given to the affected. It is clear that these communities need the state for their protection against the illegal encroachment of the resources at the local level but the existing mistrust between the state and the locals makes co-operation difficult and expensive for both parties. The only possibility to solve such problems is to create a neutral platform

which a third party has to officiate to iron out the locals and the state differences, which seem to be barriers to development in the region. Although the negotiations issue can be initiated, the state takes the final decisions and that makes it difficult for the locals to get what is right for them. It has been said that the external NGOs, which work in the region are compromised in a way and hardly stand by their objectives of working. The local condition of living is worsening every day and urgent alternatives are welcome to improve the standard of living in this region. It makes no sense to tell needy people to conserve the natural resources without giving an alternative to them. The decline of the rural economy has made conservation difficult in the floodplain because almost all the households are dependent on CPRs for their livelihood. The increase in price value for the natural resources in the regional, national and international markets has led to rapid degradation and depletion of natural resources in the floodplain. The state as the sole owner of all the natural resources in the floodplain and the rest of Tanzania has failed to put effective institutions to manage these resources because it has no money to keep the institutions function to protect the CPRs from illegal poaching and mismanagement. The infrastructure in the floodplain is in bad condition and that makes monitoring of the resources expensive for a country like Tanzania with limited capital but creating room for the illegal poachers to harvest the resources without permission. The flow of information is not free and that makes communication difficult between the central government and the local government making the implementation exercise complicated and time wasting, denying the locals their rights. The numerous red tapes in the government administration have made the management of the resource complicated and has increased the bargaining powers of some individuals who have used their positions to exploit these open opportunities. The continued influx of people from the neighbouring districts has become a problem for CPRs in the floodplain. The economic interests of these people have overcome the interests of the local people on the CPRs. The continued migration has contributed to demographic change and increasing pressure on the CPRs. unless the ideology of being Tanzanian is changed, the local people will continue suffering and nobody will mind them because their children are not in politics. The Rufiji people are being overtaken by events because the people in the central government are still in their old school of thinking that the Rufiji people are not able to manage their own resources. In this old school of thinking, the Rufiji people are considered as lazy people who like talking a lot and doing less to improve their standard of living. It will be fair on the part of the planners and policy makers to give this region a chance to prove what they can. Since the area has potential, there is nothing which will stop the Rufiji people from investing their energy and resources at the right place.

The global change of the climate has contributed to the decline in agricultural production, diminishing of fish stock in the lakes, and unplanned encroachment of the forest and continuous search for pasture and water. The problems facing the economic activities in the floodplain are intertwined and to solve one problem, another is created for the next resource. The decrease of floods in the floodplain has pushed the villagers to the highlands to harvest forest products. The breakdown of traditional institutions, which governed the management of the resources and the emergence of new state institutions, which contributed to the commercialisation of the resources led to the change in relative prices of the CPRs in the floodplain and the collective management, came to an end. This means the old institutions, which supported collective management, were dismantled and replaced with state institutions. The old institutions supported the needs of the local people and resources were valued in their culture and that led to better management. The new state institutions are controlled by few individuals with bargaining powers who manipulate the situation for their welfare and their families as well as relatives. The distribution of the resource flows in the same directions and the weak continue to sink in poverty while the strong are getting stronger economically at the expense of the poor majority. The effects of these new state institutions can be easily observed in the floodplain through household wealth ranking. The competition of interest groups for CPRs exploitation has pushed the locals to the uttermost line of poverty. The decline of enrolment in primary schools has generated untimely stakeholders in the CPRs increasing the number of dependants on these resources with slow productivity.

The internal conflicts in the communities are creating a climate of distrust among the villagers, which has to be dealt with, otherwise illegal poaching and mismanagement of CPRs will never be controlled. Since clear rules related to ethno-professional groups are lacking, the CPRs will continue to be open access unless this issue is tackled and solved. I propose that one strategy to mitigate this problem is to encourage the process of participatory crafting of new CPR-institutions whereby all the stakeholders shall be incorporated. This will give the local people powers to contribute on matters affecting their livelihoods instead of being pushed like sacks. I think if local people will be strong enough politically to decide on what they want; the management of the CPRs will be cost friendly and effective. The lack of adequate institutions leads to overuse of the CPRs and to conflicts in the area. So there is need to have proper institutions in the floodplain to govern the management of the CPRs. The rules, which are based on the local understanding and if possible, on the old institutions in a kind of revitalisation, define who will benefit from the resources in the floodplain and the surrounding areas but which are adapted to the fluctuating nature of the floodplain resources.

The differences in power relations must be clear between the locals, the state and the district people as well as the new immigrants. The incorporation of all stakeholders in the management is necessary to avoid mistrust for the success of development. It is difficult to isolate people who have been using the same resource for decades from the management. In this case the internal mistrust will come up and the resources will be misused the more because the isolated group will default for gain.

The empowerment of the villagers is just one solution of the problems facing the villagers and the CPRs today. The people in the floodplain face poverty because of erosion of CPR rules and conflicts leading to overuse of CPR. The co-management and poverty alleviation is needed urgently to address the problems facing these people. This is important because if power is shared on the local level governing CPRs, then the more evenly distributed gains from the CPRs should be a first step to reduce poverty. Apart from giving back power to local level in order to control that not too many vital resources leave the area, new strategies of income generation have to be looked for. However, these shall not interfere with existing rules and regulations developed locally. The CPR-management can be realised once the strategies of co-management are in place and the responsibilities and duties of every stakeholders are clearly defined. If one compares the old institutional framework for the fisheries, hunting and pasture use with Ostroms DP's, a first short analysis supports the hypothesis that they corresponded with the DP's. On the other hand, the new institutional framework corresponds more or less to a de facto open access because existing regulations from the state or even on regional and local level are very unclear. Also the embedding in religious beliefs nowadays is lacking completely.

List of Acronym

AFWeP	African Floodplain Wetlands Project
CCM	Chama Cha Mapinduzi
CITES	Convention on the International Trade of Endangered Species
CPR	Common Pool Resources
DPs	Design Principles
EAFRO	East Africa Fisheries Organisation
ERP	Economic Recovery Programme
IMF	International Monetary Funds
IUCN	the World Conservation Union
MNRT	Ministry of Natural Resources and Tourism
NAFCO	National Agriculture and Food Corporation
NCCR	National Centre for Competence Research
NEMC	National Environmental Management Council
NESP	National Economic Survival Program
NLD	The National League for Democracy
NRA	National Resistance Alliance
ODI	Open Direct Learning
PEDP	Primary Education Development Plan
PONA	The Popular National Party
RDA	The Ruvuma Development Association
REMP	Rufiji Environmental Management Programme
RUBADA	Rufiji Basin Development Authority
SAP	Structural Adjustment Program
SGR	Selous Game Reserve
TADEA	The Tanzania Democratic Alliance
TAHOA	Tanzania Hunters Operators Association
TANAPA	Tanzania National Parks Authority

TANU	Tanganyika African National Union
TSH	Tanzania shilling
TPP	The Tanzania Peoples Party
TWPF	The Tanzania Wildlife Protection Fund
UMD	The Union for Multiparty Democracy
UPDP	United Peoples Democratic Party
UPDP	United Peoples Democratic Party
VEMC	The Village Environmental Management Committee
VEO	Village Executive Officer
WPU	The Wildlife Protection Unit

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Annex 1: Table Index

Annex 2: Maps

Annex 3: Figures

Annex 4: Pictures from Rufiji Floodplain

Picture 1: Fishing camp Rufiji floodplain

Source: Meroka, Patrick 2004

This is a seasonal fishing camp in the middle of the floodplain and built adjacent to the community lake, which accommodates residents and immigrant fishers in the dry season as the fishing activities are concentrated in the few community permanent lakes in Rufiji floodplain. It was said a great number of the fishers come from the highlands surrounding the Rufiji floodplain and small towns such as Kibiti and Ikwiriri. The fishers can stay in the camp for one month to two months until the baskets are filled with fish, which later transported to distant markets. The fish traders are mainly from the urban towns such as Dar es Salaam but work through local agents, who take up all the management and coordination work. The recruited fishers remain loyal to the local agents to protect their contracts, which otherwise can be transferred to other fishers who campaign openly for this lucrative job. However, the village government officials denied receiving payments from the fishers or the local agents, but the fishers said their agents do pay the village council some money to allow the contracted fishers access the resource. The village government accounts book is hardly updated.

Picture 2a, 2b: The fishers are between 12-14 years old from Mtanza/Msona

Source: Meroka, Patrick 2003

Source: Meroka, Patrick 2003

However, this young fisher caught the fish from the community lake the profits made from the selling of the fish is privately invested mainly on purchasing of staple food and other basic

needs such as Kerosene, soap and salt. It is common in the Rufiji floodplain to find young fishers like the two pictures above who have taken active roles in the household economy due to economic constrains facing most of the households in this region. It was noted that single parent households are forced to encourage their children at the early age to join cash generating activities such as fishing and logging. It was said that the elderly people are shamed going to the Lake fishing, which is under stress from over fishing. Their interests are channelled through the young boys, which are hardly controlled by the village government representatives. The fishing activities of this kind relieve the household's heads from the daily provision of basic necessities to the family members. The young fishers can bring a kilo of maize flower to the household at the end of the day through their non-taxable activity. The village government said a small amount of fish like the one carried by the young fishers is not taxed as the fishers claim to be the household vegetable but end up exchanged for money. There is always a ready market within the village and this promotes such kind of fishing , however, the village authorities is against it. Rules that guided the behaviour of the local people towards this natural resource and which were implemented through informal institutions are no longer applicable said the local fisher. The tough conditions of living in this village has forced many of the youths to drop out of school and have started searching for a livelihood at early ages. The climatically conditions and the decline of food production in the floodplain have contribute to over extraction of the fisheries and other natural resources in this region as the locals have no alternative to survive other than to increase the exploitation of the natural resources within the village boundaries and sometime beyond.

It was said that the environmental conditions in the village land do not support the agricultural production as the soil texture is too poor to support farming. The number of people expands daily but the limited resources continue to shrink on a daily basis forcing the locals to abandon their social-cultural values connected to conservation and exploitation of the natural resources in the pre-state institutions.

In the pre-state institutions youths were not allowed to extract any natural resource without getting permission from the elderly people. However, the resources are said to have been in plenty and the users were less compared to the current population in the region the traditional values attached to the resources in various ethno professional groups such as fishing were respected and applied at all levels. The introduction of conservation and development through the exploitation of the natural resource in the third world countries lead to the misuse of the resources and a large number of them become an open access. The concepts of development were drawn from the economic theories, which converted each resource to cash and opened

conflicts with the traditional use of the same resources, which had locally a subsistence value but not for the market economy. These new concepts embarked on exploitation of the resources for the market economy but the former users of the resources were not incorporated in the policies, which lacked the local's needs but supported the new users.

Picture 3: The Barabaig pastoral in Ikwiriri Township

Source: Meroka, Patrick 2003

The privatisation and liberalisation processes in Tanzania, which led to the restructuring of the government institutions affected formal and informal sectors. The typical example is the out migration of the Barabaig pastoralists in the picture above from the northern Tanzania in search of the pasture and water for their animal. The local people in Rufiji floodplain were caught unaware of the arrival of the Barabaig with their animals and this has caused tensions in Rufiji floodplain where private land owners have denied them access to pasture. However, the pastoral groups are ready to safe their animals for the fee but the agricultural land occupiers in the Rufiji floodplain have rejected the offer forcing the village government officials to intervene. The above picture shows part of the group of the Barabaig pastoral group just arriving in Ikwiriri town in 2003 before they dispatched into the floodplain pastures.

Picture 4: Misakasaka conservation group in Mtanza/Msona

Source: Meroka, Patrick 2003

The first group of local people from the village of Mtanza/Msona who reintroduced Misakasaka (brush Park method) through collective action in fish conservation and use after the state institutions had failed to manage the fisheries in Lake Mtanza. The group through their chairperson agreed collectively to reintroduce the old traditional system Misakasaka, which was widely used in this region in the pre-colonial and part of the colonial time for fish conservation in the floodplain lakes. The system disappeared gradually after the replacement of traditional institutions with the centralised state institutions, which took over the entire management of the fisheries resource. The decline of the resource in the recent years forced the villagers to approach the problem collectively for personal gains. The collective action through Misakasaka (brush wood) has been successful in this village and now the resource is managed by the villagers through the traditional rituals as it was before in the pre-colonial times.

Picture 5: The booming commercial centre Ikwiriri Township

Source: Meroka, Patrick 2004

Ikwiriri Township is the main trading centre in the central floodplain and people from the neighbouring villages bring their goods for selling. Although, this rural town expanded recently from a village market to a town many factors contributed to its growth. The main road connecting the southern region of the country pass through Ikwiriri and many of the long distance traders make a break in Ikwiriri before proceeding to other destinations. It is said the construction of the Mkapa Bridge 2000-2003 attracted many people to the area for business and job opportunities in the construction sector. The distant workers were to be accommodated and entertained that is why numerous guesthouses were constructed in this village, which is now a small town. Ikwiriri was one of the Ujamaa villages, which were established in the 1970s and many people who had homes lower side of River Rufiji, which was frequently flooded in the long rains were transferred to this village, which is now a commercial town. The town serves as the main marking centre for the central floodplain but people from the western floodplain bring goods to Ikwiriri for selling as well buying the goods, which are not available in the distant villages. The distant urban traders come twice a week on the market days to buy agricultural products, which they transport to the south or to urban centres like Dar es Salaam for selling. It was noticed that Ikwiriri town attracts people from various sectors and is strategically positioned than Utete the headquarters of Rufiji District.

Picture 6: The main road Ikwiriri –Dar es Salaam

Source: Meroka, Patrick 2004

This is the only main road, which connects Rufiji district to other parts of the country especially Dar es Salaam, which is the main market for all natural resources products from Rufiji floodplain. In the background are two tracks transporting charcoal from Rufiji to Dar es Salaam for selling. However, the road is in poor conditions the business people use it to access Rufiji, which is the granary of urban regions. Despite of its importance to the Tanzanians locally the international goods to Mozambique, Malawi and South Africa pass through this road but less work is done to maintain it.

Picture 7: The stilt farming shelter (Dungu)

Source: Meroka, Patrick 2004

This (stilt structure) locally known as (dungu) provides the Rufiji people shelter during the farming period. It is said the Rufiji people built the (dung) right inside the floodplain but remain firm even in the high floods. The (dungus) are typical traditional houses of the farming families in Rufiji floodplain. Rufiji people sleep in this structure during the farming period until the harvesting is over. We can see the household facilities under the sleeping place. On the left hand side a ladder used for entering the upper part of the Dung, which is a sleeping place. The upper part is built with strong wood and it must be higher for security reasons. The dungus protects the Rufiji peasant farmers from wild animal attacks and floods but the dungus can be vacated, if the floods are above one metre. The lower part is used as a kitchen and the cooking utensils are transferred to the upper chamber after diner. The families spend half of the year in the floodplain and more to the newly established Ujamaa villages in summer. The children going to school remain in the Ujamaa villages where the government schools are built but the children absentee in school is high as they stay a lone the whole week and the parents have no control over them.

Picture 8: Mixed Farming in Rufiji floodplain

Source: Meroka, Patrick 2003

The Rufiji people farmers grow Maize and rice on the same piece of land as risk spreading. It was said in case the floods sweep off the maize then there is a chance to harvest rice. Farming in this region depends on floods and that is why maximum Utilisation of the wet soils is of importance as the soils become hard to break after the rain season is over (see picture 11).

Picture 9: Traditional fishing object

Source: Meroka, Patrick 2003

This fisher is holding a traditional fishing round basket made of special straws, which were used to attract fish to enter the basket. The technique was used during pre-colonial institutions but is no longer used for fishing in the modern times. The basket was to retain back the mature fish only and the small sizes found the way out easily as the spacing of the straws permitted the escape. It was said the fishing revolution, which took place in the 1970s as the government took over the management of this resource opened the market of the new fishing techniques (Net), which were formerly opposed by the traditional institutions but the locals plus the new distant fishers were to adapt them to meet the high demand of fish in the urban markets.

Picture 10: Tang a traditional fishing object

Source: Meroka, Patrick 2003

These young fishermen are holding a traditional fishing object locally known as Tanga, which was used as a net in the traditional fishing institutions and was made of special straws. Today this traditional object is no longer used for fishing but the fishermen use it as a grill for drying fish in the fishing camps. The fishers prefer the Tanga for drying fish because the materials used are not toxic and keep the natural test of fish. The fishers said the Tanga enables them to use less fuel to dry the fish otherwise much wood is needed for the drying as some fish species have high fat contents. In the traditional institutions the Tanga fishing method used to involve 20-30 men as the object was wide and heavy for one fisher. The fishing method involved team work and the fishers were to contact the ritual master to control the crocodiles and other reptiles in the waters.

Picture 11: Rufiji floodplain in dry season

Source: Meroka, Patrick 2003

This area is inundated in the month of March to May otherwise dry as it appears on this picture from the month of July to October. It turns green after the floods and it can be used for wet season grazing or maize cultivation, which takes three months to mature. The area is covered with loose sand, which can't support growth of annual vegetation in the dry season. The picture was taken in the dry season before the rains started.

Picture 12: Mkapa Bridge

Source: Meroka, Patrick 2004

The Mkapa Bridge named after the former president of Tanzania has opened Rufiji floodplain in the recent years. This area was considered remote before this bridge was constructed and many people were not interested in the area before. The government officials, who were posted to Rufiji, had seen it like a punishment for them and many ended up resigning. Since the opening of this bridge more people have realised the values of the area and now more people have moved to acquire land for commercial farming as well as harvesting of the natural resources.

Picture 13: Village environment management committee

Source: Meroka, Patrick 2004

This is the new collective management team, which has been initiated in Rufiji floodplain to educate the local villagers the importance of collective action in natural resource management. The team is responsible for the implementation of the village by-laws, which have been recently crafted to protect the CPRs from external users. However, this group is getting support from the District officials and the NGOs working at the local level the collective CPRs management is still resisted from the few powerful individuals who are in the CPRs business.

Picture 14: Lake Uba Encroachment

Source: Meroka, Patrick 2004

The recent encroachment of the catchments area of Lake Uba from prominent urban elite from Dar es Salaam is worrying the local people dependent on the water and fish from this lake. It was said the elite person is planning to cultivate tomatoes for the market. It is not only the villagers to suffer from the activities of this urban investor but the wild animal's corridor will be blocked. The lake is important for the wildlife in the dry season as many animals migrate from the deeper forest and make a season camp closer to access water. The chemicals, which will be used for farming is likely to pollute the lake during the rainy season.

Picture 15: Lake Uba Encroachment

Source: Meroka, Patrick 2004

Lake Uba is seen exposed and more problems are expected once farming will start. The local people from Mbunju/Mvuleni are not aware of the project and even the village government is complaining but the district authority knows the person who has cleared the area but his name can't be disclosed to the villagers. However, the land is within the village boundaries the external people manipulate the weak land laws and citizenship to acquire land wherever interest is.